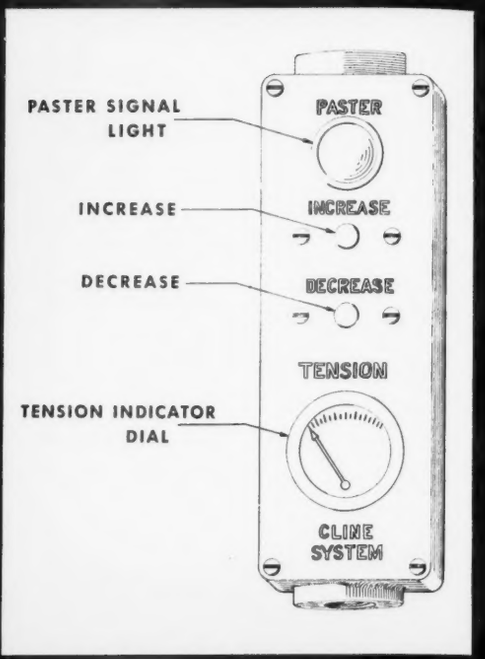
PRINTING EQUIPMENT ENGINEER

FEBRUARY 1937

A TECHNICAL PUBLICATION FOR MECHANICAL EXECUTIVES IN THE GRAPHIC PRODUCTION AND ARTS INDUSTRY



Your Pressman Will Tell You

that Automatic Electric Tension adjustable and indicated at the pressroom level, with slur eliminator, is more important than any kind of pasters.

You can get combined Cline Automatic Electric Tensions and Cline High Speed Pasters, a combination that can't be equalled for web control. This insures constant tension while paster is made.

Used on presses that run at the highest speed, have the highest production average and print the finest picture pages.

Get facts on Tensions and Pasters and Motor and Control equipment from us when considering new equipment or increasing the efficiency of your old equipment.

CLINE ELECTRIC MFG. CO.

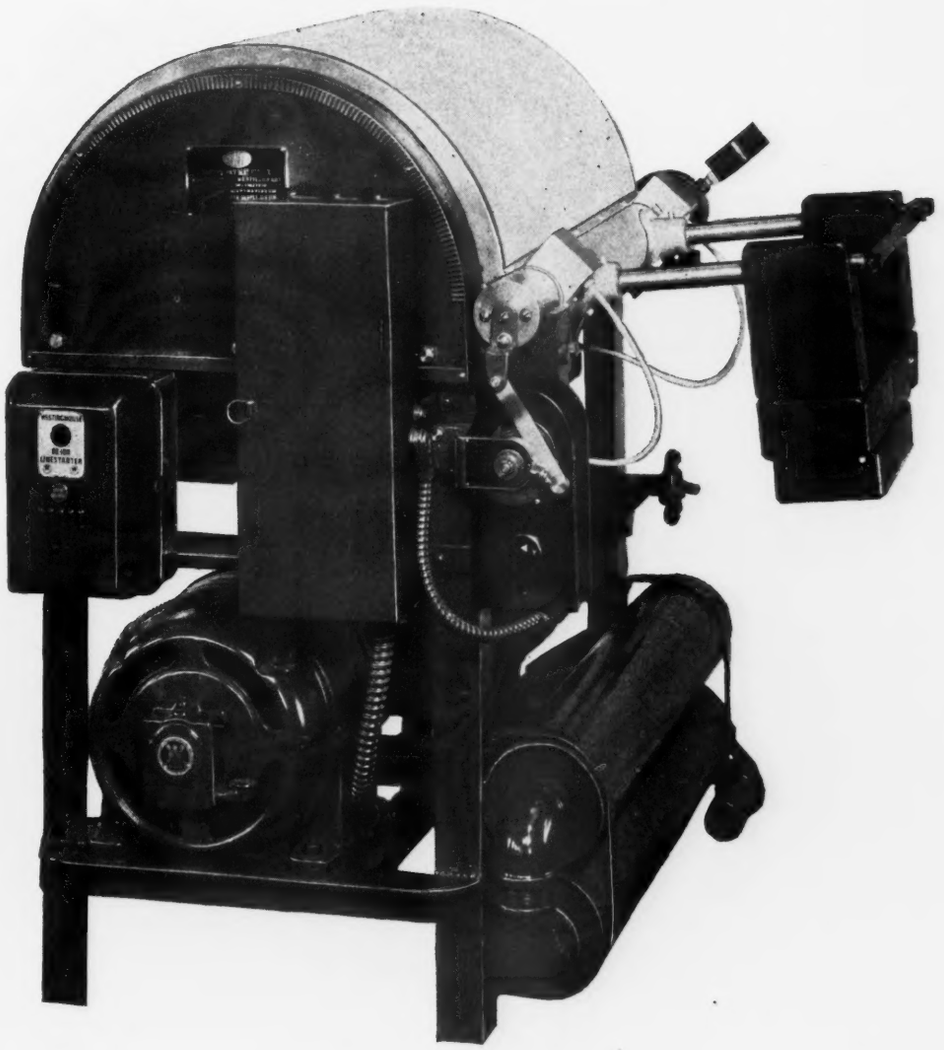
MAIN OFFICE: 211 W. WACKER DRIVE, CHICAGO, ILL.

Western Office
CROCKER FIRST NAT'L BK. BLDG.
SAN FRANCISCO, CALIF.

Eastern Office
220 EAST 42nd STREET
NEW YORK CITY

CLINE — QUALITY NAME SERVICE FAME — SYSTEM
CLINE ELECTRIC MFG. CO. CHICAGO
CLINE WESTINGHOUSE

POWER PRODUCTION



The Stahi Autoformer puts your dry-mat routine on a **Power Production** basis, saves **Valuable Production Time**—guarantees **Uniform Casting Levels**—improves printing. **Higher Standards** are set up where the **Autoformer** is used.

STAHI NEWSPAPER SUPPLY COMPANY, INC.

1020 CROCKER STREET
LOS ANGELES, CALIF.

538 So. CLARK ST.
CHICAGO, ILLINOIS

417 OREGONIAN BLDG.
PORTLAND, OREGON

AGENCIES:

GOSS PRINTING PRESS COMPANY, Chicago, New York, San Francisco
CERTIFIED DRY MAT CORPORATION, 342 Madison Avenue, New York
DUPLEX PRINTING PRESS COMPANY, Battle Creek, Michigan
WOOD FLONG CORPORATION, Hoosick Falls, New York
BURGESS CELLULOSE COMPANY, Freeport, Illinois
R. HOE & COMPANY, New York, Boston, Chicago, San Francisco
WOOD NEWSPAPER MACHINERY CORPORATION, New York, N. Y.
WALTER SCOTT & COMPANY, Plainfield, N. J.

Foreign Agencies:

GOSS PRINTING PRESS COMPANY of London, England
A. M. CARNEIRO & COMPANY, New York, N. Y.
TORONTO TYPE FOUNDRY COMPANY, Ltd., Toronto, Montreal, Winnipeg, Canada

Executive Cost Control

By L. E. BAUERFEIND*

Accountant outlines a certain method for controlling varying payroll requirements from day to day in the newspaper composing room.

I.

MOST newspaper cost accountants and many composing room executives have records of one kind or another which enable them to arrive at a fairly accurate page cost for composing room labor, and for total composing room expense, but it is regrettable that so few newspaper executives break down these accounts into their component elements and make use of comparative records in order to control the present and forecast future expense. While the total composing room expense may be favorable it is entirely possible that certain elements of expense may be excessively large and that worthwhile savings may be made by keeping better records and by comparing the items month by month and year by year. This is done by nearly all successful manufacturers in other industries, and by a few newspapers, but as a whole newspapers have ignored the individual items of composing room expense items and look only at the total figure divided by the number of pages produced.

It is unnecessary to guess at the amount of labor (or other expense) which will be required to produce a newspaper page or a certain number of pages. If a very few records are kept in the composing room by the foreman, or in the bookkeeping department, a story will be provided which will enable the foreman to forecast accurately the labor requirements for the day's work. These records will be the basis from which the labor budget is formed.

Many other uses for these records will be found, when an intelligent study of them is made, such as weeding out incompetent employes and placing work where it can be done most efficiently. The method which I will outline in this article is a hybrid system making use of memorandum records, which will form the base for your payroll, and of certain principles of cost accounting and efficiency engineering used in other industries. It is important to know what your costs have been but it is much more important to know what they will be for a given amount of work.

I wouldn't attempt to tell you what any item of your expenses should be. Because some other newspaper has a certain figure doesn't mean that it would be the correct figure for your plant. These figures will have to come from your own records, showing the experience of your plant, and will differ in nearly every plant.

Labor the Important Item

In this article I will deal entirely with labor as it is the most important and largest item of composing room expense. I will not attempt to tie this system into your general books of accounts but will explain the use of auxiliary records which I hope will enable you to supervise your composing room in an efficient manner.

From a point of pure efficiency it is totally immaterial how many dollars we spend. What matters is how much we receive for the dollars spent, and how favorably our return compares to the other fellow's return on expended dollars and our own need for that, be it labor or material, which we receive for that dollar. There are publishers who spend many hours endeavoring to reduce the number of dollars spent in the composing room. The usual method is to "hop on" the foreman about his expenses and seldom does this effort take on a constructive nature.

The records of every newspaper can reveal how much money each composing room employe received—but the records of very few of them can tell you how much production each man gave in return for this money. Production is the important thing and is the guide to efficiency.

Operations in the System

Proofs of all matter composed, including advertising, should be made in duplicate and should bear the name of the compositor. One copy goes to the proof desk and the other to the foreman's desk for use in the operation of this system.

After the day's work is finished these proofs should be separated and measured in order to have a record of the number of column inches each employe has produced. This sum is then reduced to an efficiency index inch in order to be able to compare the efficiency of employes. We will use the efficiency index inch because it is easier than to reduce all type matter to ems or lines. It is obvious that an operator producing 20 in. of 6 pt. market tables should receive more credit than he would for setting 20 in. of 7 pt. straight matter. And, too, ems cannot be used in the ad alley but efficiency inches can.

Efficiency Index Inch

An efficiency index inch is nothing more or less than a method of equalizing the different classifications of composition. It is arrived at in this manner:

One inch of type matter, one column wide, in the body type of the newspaper is one efficiency inch.

Presuming the body type to be 7 pt., then, one inch of 6 pt. straight matter would be 1.15 efficiency inches. The number of inches of 6 pt. straight matter set by an operator multiplied by 1.15 would give the number of

(*Continued on Page 46*)

*The American-Statesman, Austin, Texas.

L. E. Bauerfeind outlines a composing room cost system and gives some potent reasons for *knowing* costs.

Someone's Going to "Catch It!"

AN important retailer's ad ran in the paper with price figures transposed. And now the "chief" is cracking down.

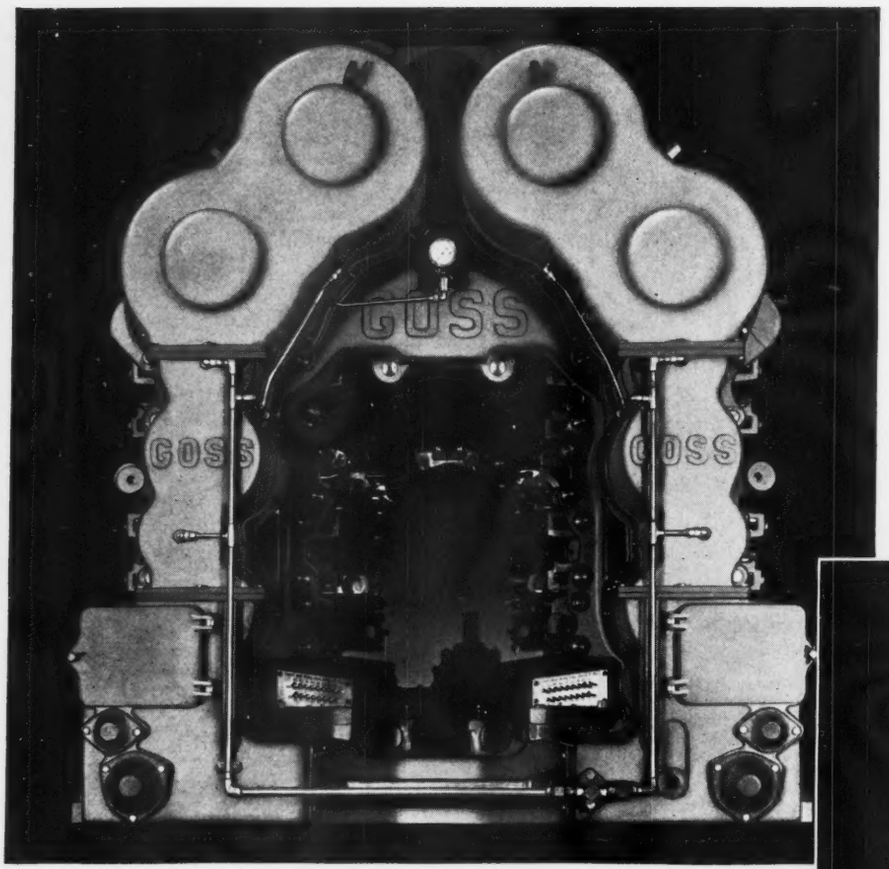
The worst of it is that the error occurred after the proof had been passed by the advertiser. No doubt an unfortunate compositor made the transposition of types while making some minor correction or in locking up.

Things like this simply cannot happen with Ludlow all-slug display composition with lines cast complete in single slugs. There's no danger of price figures getting mixed up—no last-minute check-ups—no delays—no lost motion. An O.K. on a proof is final. Once it is read and corrected, the form stays correct. Mistakes do not occur between the composing room and the stereotype room.

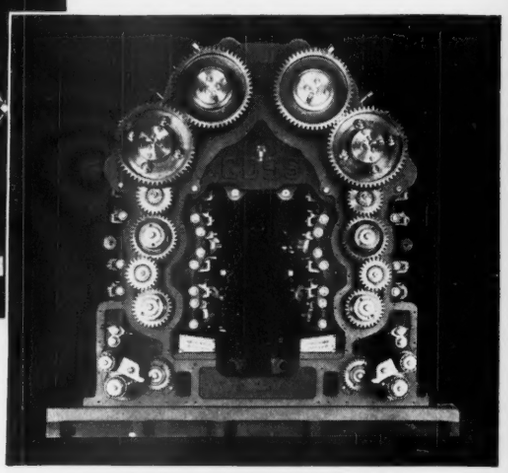
The Ludlow System will relieve your mind of many unnecessary worries, prevent difficult situations, and in general improve the efficiency of the ad alley. Its simple, direct method speeds the flow of production, enables the composing room to make a better showing. The wide range of Ludlow typefaces in an unlimited supply makes possible a greater variety in advertising display. Write us today for all of the facts.

Set in members of the Ludlow Karnak family.

LUDLOW TYPOGRAPH COMPANY
2032 CLYBOURN AVENUE + + + CHICAGO, ILLINOIS



EACH MOVING PART IS ENCLOSED . . . YET COMPLETELY ACCESSIBLE



SAFEST OF ALL

. . . In Operation . . . Most Convenient too

THE GOSS HIGH-SPEED ANTI-FRICTION PRESS

To guard the operator against all harm was the principal objective in the designing of this press. Along with this new degree of safety, a new high in operating convenience has also been achieved.

Note how all gearing, shafting, vibrating motion, barring hubs, and cylinders are entirely protected. All cylinders rotate outward—it is impossible for an operator to catch his hand or arm in them. Durable guards, designed for instant accessibility, protect inking drums and cylinders. The housings that contain the oil pumps are arranged with covers which are removable if resetting of the pumps should be required. Every housing is designed so it can be taken off without affecting the adjacent housings.

A patented end adjustment of the fountain screws regulates the flow of ink. There is no need to go between press units or reach past moving parts to set color. All roller socket adjustments are readily accessible on the outside of the press frame. The ductor roller, operated direct from a rotating cam, can be adjusted easily for variation in diameter of roller.

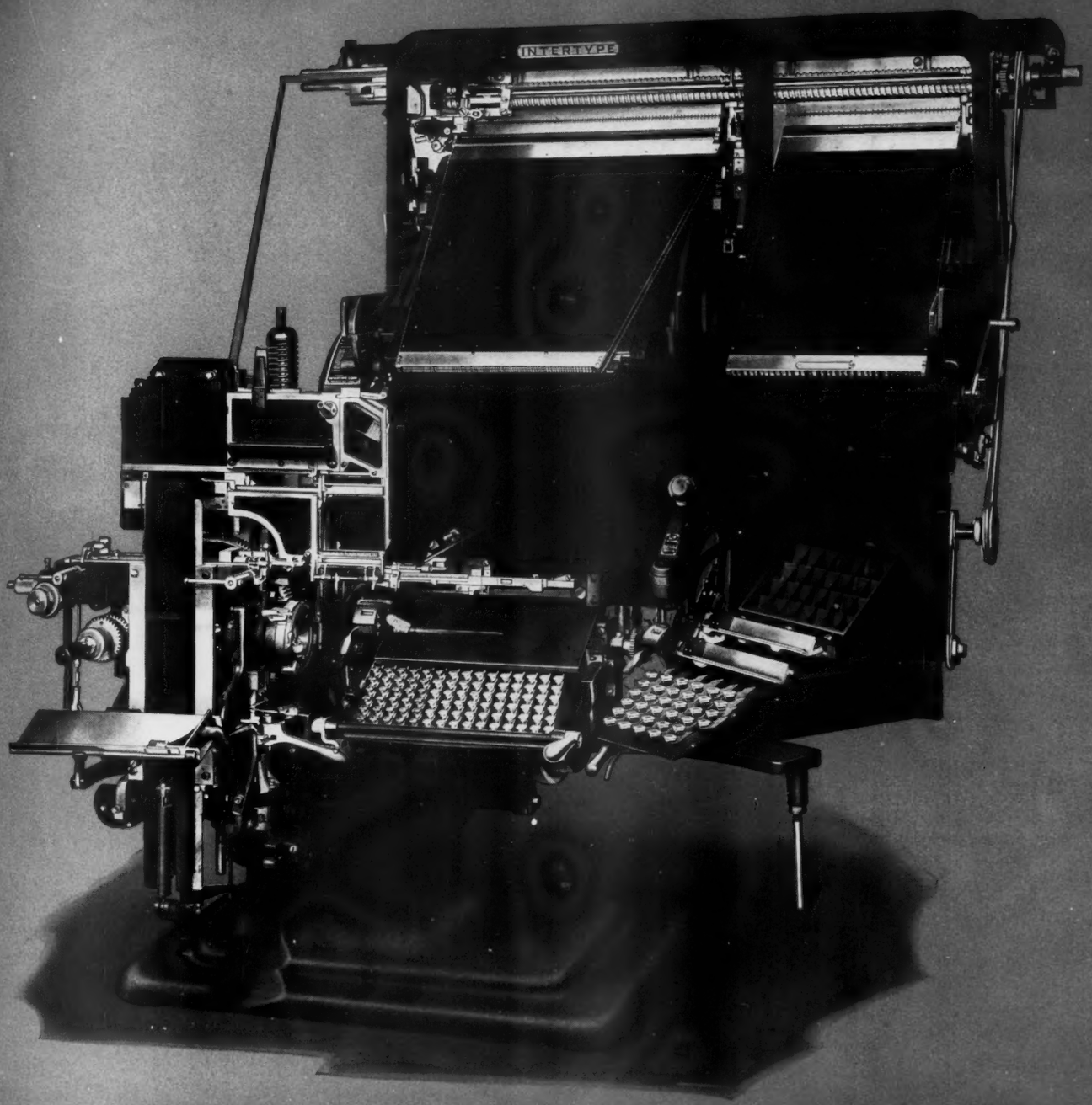
Excelling not only in safety and convenience, the Goss High Speed Anti-Friction Press also surpasses other units in economy and long life. Full data will be supplied promptly on request.

THE GOSS PRINTING PRESS COMPANY, PILSEN STATION, CHICAGO

GOSS

New York . . . . . 220 E. Forty-Second Street
San Francisco . . . . . 707 Call Building
GOSS FOSTER Ltd. . . . . London, England

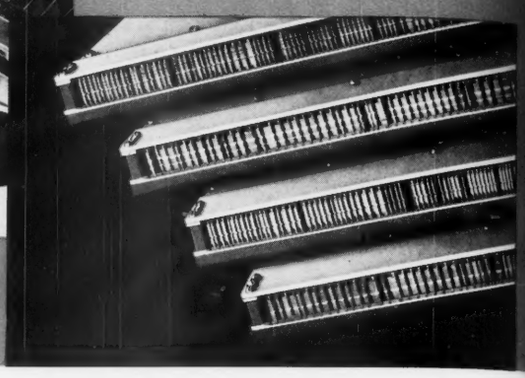
INTERTYPE AGAIN STEPS AHEAD



ANNOUNCING a complete new line of

STREAMLINED INTERTYPES

With four main magazines ON THE MACHINE — and, if required, from one to four side magazines — the new Streamlined Intertype Four-Decker are more flexible and more profitable to users than ever before.



THE NEW STREAMLINED INTERTYPES

EMBODYING THE LATEST DEVELOPMENTS IN LINE COMPOSING MACHINE DESIGN

New Appearance. The new Streamlined Intertype steps ahead in appearance as well as efficiency.
New Mechanical Features. Greater flexibility, speed, and economy.
New Performance. New standards of simplicity, ease of operation, and dependable service.

STREAMLINED INTERTYPES! Streamlined for appearance and engineered for performance! A complete new line of flexible and versatile four-magazine machines — with a long list of new improvements and simplifications.

True to Intertype tradition, every feature of these new Intertypes is a pace-setting step ahead in the march of progress. With from four to eight magazines full of matrices at the quick command of the operator — with a background of sound engineering and the most painstaking manufacture — the new Streamlined Intertypes offer to printers and publishers definite, direct, measurable savings of time and money.

The machines illustrated in these pages are Streamlined Four-Deck Mixers — with mixing (instantaneous changes) between any two adjoining magazines. Streamlined Single-Distributor (non-mixing) Intertypes can be furnished also. Various combinations of standard 90-channel magazines and wide 72-channel magazines are available for both types of machines.

INVESTIGATE! STEP AHEAD WITH THE NEW STREAMLINED INTERTYPES!

101 FEATURES OF THE NEW STREAMLINED INTERTYPES

The following features of the new Streamlined Intertypes are worth YOUR investigation and careful analysis—whether you are an operator, a machinist, a foreman or mechanical superintendent, or a chief executive. Most of the features listed are included in all models, and belong to the Intertype exclusively, just as many earlier Intertype features were for a long time obtainable only on Intertypes. More detailed information about these features of the new Streamlined Intertypes will be furnished on request.

THE 101 FEATURES

1. Modern Streamlining gives the new machines an attractive and distinctive appearance in keeping with their improved design and construction.

2. Covers Over Moving Parts relieve eye and nerve strain and prevent accumulations of dust and other foreign matter. Disconcerting glare is prevented by dull finishing of all plated surfaces.

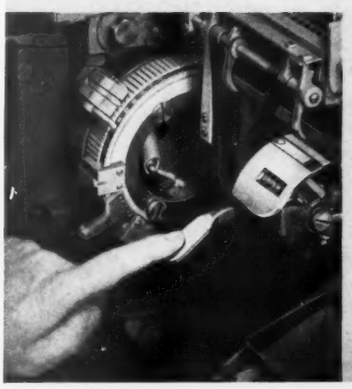
3. Selective Mixing. An innovation which permits continuous mixed composition from any adjacent pairs of magazines or from outside pairs only.

4. Alumilite Magazines. Special black-processed aluminum magazines — full length, three-quarter length, or half length —afford not only lightness of weight but also full protection against corrosion and sluggish matrix response.

5. Finger-tip changes from one font of type to another. The accompanying picture-diagram shows the remarkable simplicity of the Streamlined Intertype method of changing from one type to another on mixer machines. The flip of a finger does the trick. The two feather-touch levers provided for making these changes are conveniently located at the left of the main keyboard and at the left of the side keyboard. These levers control a very slight movement of the keyboard rods (see diagram) in changing from one type to another.

6. One-handle control of both main and side magazines. On all of the new Streamlined Intertypes, a simple, quick, easy-to-operate shift handle changes from one magazine to another—or, on the Four-Deck Mixers, from one pair of magazines to another. The same shift operates both main and side magazines. Magazine changes are made almost instantly—practically without effort—and, most important, there are no mechanical complications.

FEATURE No. 5



FEATURE No. 6

101 FEATURES OF THE NEW STREAMLINED INTERTYPES

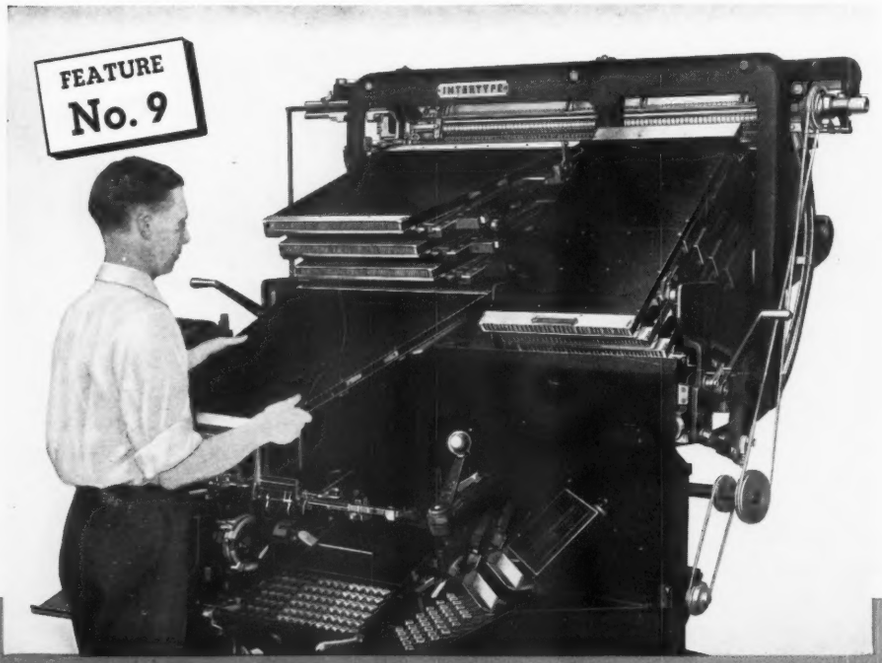
7. Simple Magazine Counterbalance
A new method of counterbalancing the weight of four-magazine units, to provide easy shifting of magazines, is simpler and more effective than ever before.

8. New Four-Deck Side Unit
Carries four wide auxiliary magazines stacked flatwise. Side magazine changes are made with the same light-action handle that is used for shifting the main magazines. A simple switch changes the action from main to side magazines or vice versa

9. Improved Front-Removal Magazines
The picture on this page shows an operator removing a bottom or fourth magazine from a Four-Deck Streamlined Intertype. Full-length or split magazines can be used in any position. Split magazines can be had in either half or three-quarter length. All magazines are easily removed and replaced from the front, as shown.

10. Black Steel Finish
11. Adjustable Spaceband Keys
12. Fixed Mixer Front
13. Wider Main Magazines
14. Instant Response of Mixer Shift
15. Automatic Mixer Font Selector
16. Interchangeable Magazines
17. Improved Metal Pot Design
18. Automatic Font Distinguisher
19. Alemite Lubrication
20. Oilite Bearings
21. New Mold Cooling Blower
22. Two-letter 18 and 24-point Matrices
23. New Mold-Slide Safety
24. Micrometer Knife Block Settings
25. One-Hand-Shift Universal Ejector
26. New Liner Adaptor
27. Space-Matrix Release
28. Hand-Stick Attachment*
29. Automatic Quadder*
30. Automatic Line Indentions*
31. Low-Slug Quadding*
32. Adjustable Mold Banking Blocks
33. Single Mixer Distributor Box
34. Separate Main and Side Keyboards
35. Channel Entrance Operating Lever
36. Vise Closing Attachment
37. Magazine Removal Safety
38. Two-Piece Escapements
39. New Star-Wheel Friction Clutch
40. Positive Assembler
41. Keyboard Accessibility
42. Removable Keyboard Banking Bar
43. Quickly Removable Rubber Rolls
44. Quick-Change Universal Liners
45. Casting Without Spacebands
46. Automatic Casting of Blank Slugs
47. Positive Pump Stop
48. Channel Entrance Lock
49. Endless Matrix Delivery Belt
50. Finish of Assembling Elevator Lift
51. Improved Assembler Slide
52. New Keyboard Lock
53. Wide Quad Box
54. Unit-Built Reed Racks
55. Improved Channel Entrance
56. Direct-Line Channel Entrances
57. Automatic Distributor Safety
58. Special Mold Steel
59. Rigid Pi-Tube
60. Safety Pi-Stacker Drive
61. Assembler Front Partitions
62. Auxiliary Position Line Safety
63. Quick-Change Keyboard Cams
64. Pot Pump Rod Shield
65. Delivery Slide Safety Release
66. Adjustable Second Elevator Guides
67. Automatic Magazine Shutters
68. Assembler Front Accessibility
69. Precision Spacebands
70. Left-Hand Vise Jaw Adjustment
71. Assembling Elevator Gate Scale
72. Slug Lever and Guide
73. Down-Stroke Knife Wiper
74. New Wide Pedestal Base
(Available Only on Mixer Models)
75. Two-Speed Keyboard Drive
76. Adjustable Distributor Beam
77. Two-Pitch Distributor Screws
78. Electric Pot with Outside Heaters*
79. Wide-Tooth Matrices
80. Positive Spaceband Release
81. Self-Seating Ejector Lever Link
82. Adjustable Pump Spring
83. Vise Foot Release
84. Self-Aligning Mold Disk Support
85. Visible Gas Burner Control
86. Greater Magazine Flexibility
87. Special Alloy Castings
88. Improved Back Mold Wiper
89. Direct Reading Assembler Scale
90. Self-Adjusting Mold Disk Clutch
91. Line Transfer Safety
92. Improved Delivery Slide
93. Short-Path Assembler Entrances
94. Distributor Accessibility
95. Metal Chip Deflecting Chutes
96. Matrix Retaining Rails
97. Second Elevator Starting Weight
98. Screw-Bearing Knife Block
99. Metal Feeder*
100. Quick-Drop Pump Latch
101. Double Mold Disk Pinion

* Extra Equipment



For more information about the new Streamlined Intertypes, write or wire to Intertype Corporation, Brooklyn, N. Y.

STEP AHEAD WITH THE NEW STREAMLINED INTERTYPES

BETON FAMILY AND CAIRO OPEN PRINTED IN U.S.A.

A BREAK FOR THE MAN "IN THE MIDDLE"

THE stereo department is the cross roads where all criticisms meet. Is the press work faulty? Blame the plates. Are forms delayed? The stereo room should have shown more speed. * * * From art room and copy desk through to the lad who delivers a late paper, all complaints tend to lodge on that briefest and most hurried operation * * * the operation on which all modern, rapid newspaper production is based.

Woe to the stereo superintendent who "just takes it." His life will be a burden. * * * The aggressive one fights back by demanding carefully selected material and equipment and by drilling his force for split second routine. * * * The turning point in many a stereotyper's triumph has come on the day when he demanded sensitive, easy molding, quick scorching Certified Mats * * * the mats that deliver first casts as perfect as the ensuing ones.

For dependable stereotyping, rely on Certified Mats, made in the U. S. A.

CERTIFIED DRY MAT CORPORATION

3138 MADISON AVE., NEW YORK, N. Y.

Certified DRY MATS

PHOTOGRAPH COURTESY NEW YORK HERALD TRIBUNE

—permanent holder of the Francis Wayland Ayer Trophy, won three times on a press dressed 100% with Goodyear Rubber.

THEY USE RUBBER for SPEED-WITH-QUALITY

The majority of large metropolitan newspapers are printed on Goodyear Rubber Underpacking because long experience proves

—it does not beat down; holds its gauge!
—it maintains correct surface speed!
—it is oil-resistant; does not swell!
—it is highly resilient; neutralizes cylinder "whip"!
—it gives even, uniform impression!

These press-proved advantages mean sharp, clear, fast, economical printing of the highest quality—as the many high awards won by newspapers printed on Goodyear Rubber Underpacking prove. Why don't you investigate? It takes only a line to Goodyear, Akron, Ohio, or Los Angeles, California.

Branches in all principal cities

THE GREATEST NAME IN RUBBER

GOODYEAR

MORE NEWSPAPERS ARE PRINTED ON GOODYEAR RUBBER UNDERPACKING THAN ON ANY OTHER KIND

FEBRUARY 1937
Volume 53 No. 5

PRINTING EQUIPMENT ENGINEER

Trade-Mark Registered U. S. Pat. Office

A Technical Publication for the Mechanical Executive Responsible for Printing Production, Equipment and Supplies in the Commercial, Magazine, Private Plant and Daily Newspaper Field

Established 1910

Member of Controlled Circulation Audit

Published Monthly
AT 1276 W. THIRD ST.
CLEVELAND, OHIO

Eastern Manager:
RUSS BIRCHFIELD
509 FIFTH AVE., NEW YORK, N. Y. PHONE VANDERBILT 3-5191

Western Manager:
E. P. BLOOMSTER, 232 E. ERIE ST., CHICAGO, ILL. Phone SUPerior 2444

Copyright 1937 by Willsea Publishing Co.; single copy, $.25; subscription price, $2.00 per year, in advance. Subscription rates for Canada and Foreign Countries on application. *Printing* EQUIPMENT *Engineer* is fully protected by copyright and nothing that appears in it may be reproduced either wholly or in part without permission

CONTENTS

	Page
Letterpress Refinements	11
New Streamlined Intertypes *By L. W. Willis*	13
Largest Hoe Color Press	16
Appliance Engineering Necessary *Adam Henry Reiser*	20
Public Printer's Report	22
Photogravure *Ralph H. Winship*	24
Reacts to Surroundings *Ellsworth L. Bailey*	26
New Printing Equipment and Supplies	28
Patents	34
Technical Literature	45
Advertisers' Index	46

Published by Don Will • Edited by Mac Sinclair

Associate Editors: Ira D. Pilliard, Adam Henry Reiser

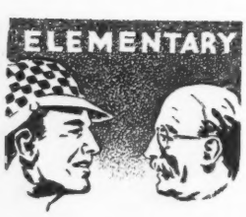
HOW OBSERVING ARE YOU?

How do you know that this plant uses MATRIX CONTRAST SERVICE?

We didn't take the picture shown at the right. Yet the minute we saw that man in the foreground, we suspected that the picture was taken in a plant which uses Matrix Contrast Service. How did we know?

The answer is that the gentleman in question is apparently reading his line in the assembling elevator . . . and doing it with obvious ease, without leaning forward, and at a glance.

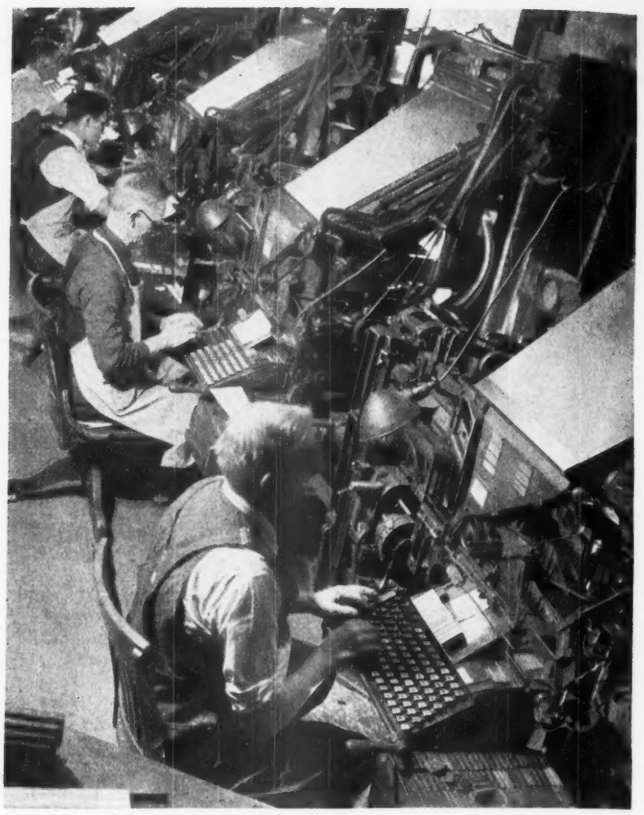
But, you say, how do you know that he is reading the line at a glance?



★

Elementary, my dear Watson. Because his hands are on the keyboard . . . probably he was still "punching keys" when the flashlight went off.

Now, when you see a man reading his line at a glance . . . during the second when he looks up to see if the line is full enough to cast . . . and when you see him do it easily, without leaning forward to get a better look . . . then you can be pretty sure that his firm is using Matrix Contrast Service.



BLACK and WHITE Matrix Contrast Service makes lines of matrices easily readable. As a result, the operator notices and corrects typographical errors before "sending in" his lines. In this way at least 25 per cent of all errors can be prevented . . . (that is the conservative GUARANTEED figure) . . . thus saving time all along the line, particularly for operators and floor men.

In addition to saving time, Matrix Contrast reduces eye-fatigue, conserves energy, and promotes increased production and lower costs.

★

Make us prove it! Write for facts and figures NOW while you have it in mind.

MATRIX CONTRAST CORPORATION

EMPIRE STATE BUILDING, NEW YORK

SOLE LICENSEES OF THE PERCY L. HILL MATRIX CONTRAST PATENTS NOS. 1,466,437 AND 1,796,023

Letterpress Refinements

By STAFF WRITER

Pre-makeready and inspection of printing elements, spraying devices, color and ink developments have all contributed to keep letterpress dominant.

THE offset process, which is about thirty years old, caused the leaders in letterpress to realize that the older and leading process must be modernized to remain the principal printing process. Thirty years ago, none but a madman would have said precision proof presses costing thousands of dollars would soon be common, that precision plates almost eliminating makeready were under consideration and that pre-makeready would greatly reduce the cost of letterpress printing. In those days such leaders in precision and preparation as Claybourn, Hacker and Vandercook were studying how to modernize letterpress.

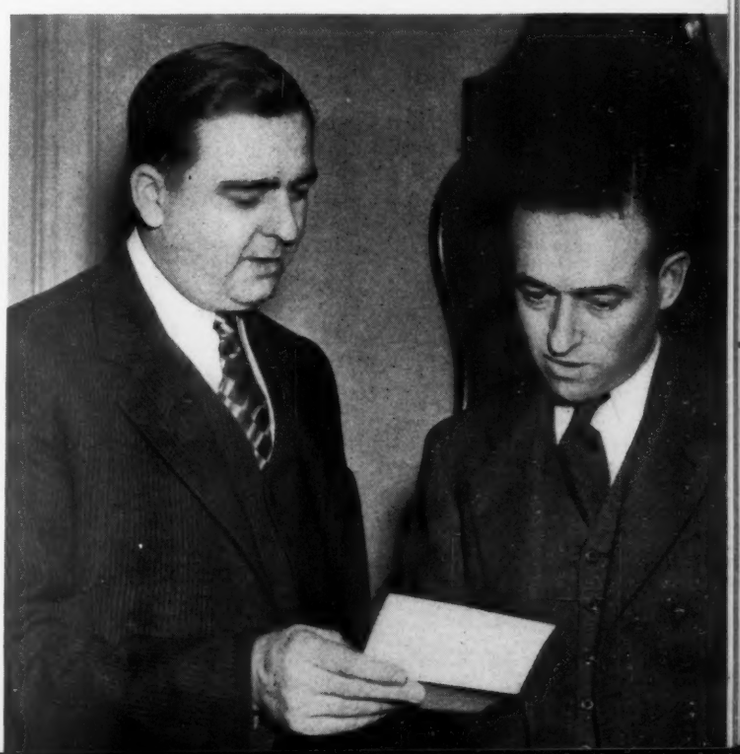
Since the entire form is on a plate in offset and gravure, these leaders saw that letterpress form units should reach the press in as nearly perfect condition as possible in order to reduce makeready, which is not required in the younger processes. At the same time the manufacturers of equipment and supplies for letterpress began to make improvements which freed letterpress from imminent obsolescence, one step in advance following in rapid succession, all too well known to require mention. As an example of trends, the spray and quick-drying inks may be noticed. One of the serious troubles in letterpress was the danger of offset and sticking when printing at high speeds and to avoid this much work was run under color. Sheet heaters and neutralizers were helpful and finally the spray was introduced, to become immensely popular since it eliminates all danger of sticking and offset and permits full speed on all classes of work, even overprint varnishing. Hardly had the spray arrived when inks that dry as they "hit" the paper appeared on the scene. When a complete line of these inks is perfected many troubles will be eliminated. This is the research period in printing inks and great improvements may be expected.

Four-color Process Printing

Even the metropolitan dailies have been forced to advance further and further into the field of color printing, partially because the magazines in the circulation of a million or more class have convinced the advertisers of the value of color.

The best results from an artistic standpoint are secured with single-color presses where one color is nearly dry before another is superposed. Conditions must be favorable to get the full value of a halftone plate in a print on paper in one color, so difficulties in using wet inks to print on wet inks is the four-color process on two and four-color presses may be imagined, even if the engraver's

Preparations for entertaining the Eighteenth Annual Convention of the International Association of Printing House Craftsmen, Inc., in Cleveland this summer are being developed enthusiastically by Cleveland Craftsmen. Below at left is D. W. (Bill) Stock, Chairman of the Publicity Committee and member of Board of Governors of the Cleveland Club. John W. Knox, President of the Cleveland Club of Printing House Craftsmen is shown at right. Mr. Knox is also Convention Vice Chairman and Chairman of the Printing Committee.



skill in helping to secure good "trapping" and to avoid mixing of the inks has been joined to the knowledge of the ink maker and the skill of the pressman. Favorable conditions include good paper and inks, a press in good condition, good plates, thorough makeready and of great importance, register.

The greatest volume of four-color process printing is done on four-color presses in the magazine and large catalogue field and the greatest volume in the commercial field is printed on two-color presses. Because of cost, a thinner paper is used on the largest jobs on the two and four-color presses and a better register on large sheets is possible than on single color presses. Also, the two and four-color presses require less space, there is less cost of labor, more uniform color and less spoilage.

In some plants jobs are worked advantageously on both single and two-color presses. A favorite sequence is yellow first on the single, black and red on the two-color and blue on the single press. No hard and fast rule is possible as the choice of sequence depends on the subject.

Those plants which run continuously on the same or nearly the same paper enjoy an advantage as it is easier to standardize on engravings and duplicate plates, inks, makeready, etc.

The basic principle in the choice of color sequences is to run a lighter color first and superpose a darker color on it. Pickup of the darker by the lighter color is more disastrous than lifting of the lighter color by the darker. This is the governing principle on the two-color press. One the single press, the lighter colors, including transparent process yellow, are often run last to avoid offset. Since the almost universal adaptation of the spray to color printing, offset is almost out of the picture and no longer need influence the choice of sequence.

Probably the most common sequence on the two-color press is yellow, black, red and blue. Other popular sequences are yellow, red, black and blue and red, black yellow and blue. All the possible sequences have been used from time to time to meet the exigencies of the job but the above are in general use. It will be found advantageous in both the engraving and printing divisions to adopt a popular sequence and adhere to it unless an exceptional job prevents.

In four-color process printing on the four-color press the ink difficulties are increased to such an extent that a compromise between quality and speed must be agreeable. Without this compromise the vast volume of color printing in magazines and cataloges of equal circulation would not be possible. In the past much misunderstanding and dissatisfaction was caused when the completed work did not approximate the engraver's proof. The removal of this misunderstanding, however, has been accomplished by using the modern proof press on which with a cylinder impression and the same inks to be used wet on the production press the four-color proofs are pulled on the same paper to be used on the production press.

The four-color process originated in the addition of a weak or grayish black to the yellow, red and blue of the three-color process. Certain color values were added in this way and on many jobs the black answers as a key plate. In the course of time, it became common to include four-color prints and black halftone prints on the same sheet and this led to the adoption of a halftone black to substitute for the four-color black which is too gray for regular halftone black work. A suitable halftone black ink now serves as four-color process black and halftone black on forms containing both black and four-color plates.

As previously mentioned, the former trouble with offset and sticking has been eliminated by the introduction of the spray and removes the tendency to run under color to avoid this difficulty. Scant color is not permissible. The progressive proofs must be matched.

Neither is too much color permissible. When a process color does not match that of the progressive proofs it is out of the question to run over color to get a match. The weak color must be strengthened or the correct color ordered from the ink maker.

Employment and Service Department

for Readers of

Printing EQUIPMENT *Engineer*

Employers, production and mechanical executives may insert notices in this department.

Items for this department may pertain to the following subjects: "Executive Wanted," "Association or Partnership Wanted," or "Position Wanted;" readers referring to subjects of a personal nature such as obtaining information about addresses of executives, supplying copies of technical articles and magazines, patents for sale or requests for contacts for developing and/or financing of inventions.

Any reasonable request from an employer or mechanical executive for the printing of a notice upon a subject other than the ones listed above will be granted.

Notices may be printed under the following regulations: First insertion (maximum six lines) is free of charge. All subsequent insertions of the same item subject to a charge of 75c per line in advance.

Address all communications with box number to *Printing* EQUIPMENT *Engineer*, 1276 West Third St., Cleveland, O.

PRODUCTION SUPERINTENDENT—Wants connection with commercial printing plant. Competent and thoroughly experienced to meet productions costs in book, publication and commercial printing. Experienced in estimating and selling. Best references. Desires to locate Central West or West. Reply Box 8.

MANUFACTURING CONTACT—Inventor wants contact with manufacturer to market No-String Ty-Up Galley. Eliminates use of string for all type matter in the printing plant. Replies should be referred to Box 2.

KEEPING TRACK

The latest issue of The Linotype News features a story headed "A Simple and Efficient Plan for Keeping Track of Old Age Benefit Payments," which is illustrated with printed and typewritten forms worked out by accounting experts at Linotype headquarters.

THE A.N.P.A. MECHANICAL CONFERENCE

According to an announcement released by Manager W. E. Wines, the Mechanical Committee at its meeting in New York on January 26 selected Chicago as the place for holding the 1937 A.N.P.A. Mechanical Conference. The Drake Hotel will be conference headquarters and the days and dates are Monday, Tuesday and Wednesday, June 7, 8 and 9.

New Streamlined Intertypes

By L. W. WILLIS*

The new series of composing units includes four-magazine mixers as well as four-magazine single-distributor machines with improved magazine shift

IN INTRODUCING to the reader the new Streamlined Intertypes, nothing will serve better at the outset than a visual inspection of the picture here shown. There are many innovations in design—simplified shapes and contours, smooth surfaces and new outlines.

In addition to effecting this modernized appearance, certain of these alterations in design result also in important mechanical improvements. Among these is the new wide pedestal base with a lower center of gravity, greater weight and better distribution of its increased surface area on the floor. The greater stability and rigidity of this improved design means better balance and absorption of vibrations throughout the machine to provide smoother circulation of matrices, especially through the distributor mechanism.

Other changes in appearance which contribute additional advantages are: (1) Hinged flush-set covers across the front which obscure from the operator's vision disconcerting irregular outlines and moving parts. These covers relieve eye and nerve strain and prevent dust accumulations but do not affect accessibility. (2) Black steel finish of many parts and the dull finish on all plated surfaces eliminate disconcerting glare. (3) Alumilite magazines with black grained finish afford lightness of weight and full protection against corrosion and sluggish matrix response.

Standardized Mixer and Non-Mixer equipment Units

Due to the Intertype standardized basic unit construction, the new Streamlined Intertypes fall in one of two broad classifications: *Mixers* and *Non-Mixers*. In each class there are several equipment units which differ from one another according to magazine capacity and type face range. The *non-mixer* or single-distributor machines are the Intertype Models C and H and the *mixer* or double-distributor machines are the Models F and G.

In the four-deck (four-magazine) equipment of the new Streamlined Series, it might be well to state briefly the magazine and matrix capacity of each model. These are as follows:

(1) The Model C non-mixer carries four standard 90-channel magazines for text composition and matter requiring type sizes up to and including regular 18 point.

(2) The Model H non-mixer carries four wide 72-channel main magazines for display faces including normal 30 point and some 36 point faces.

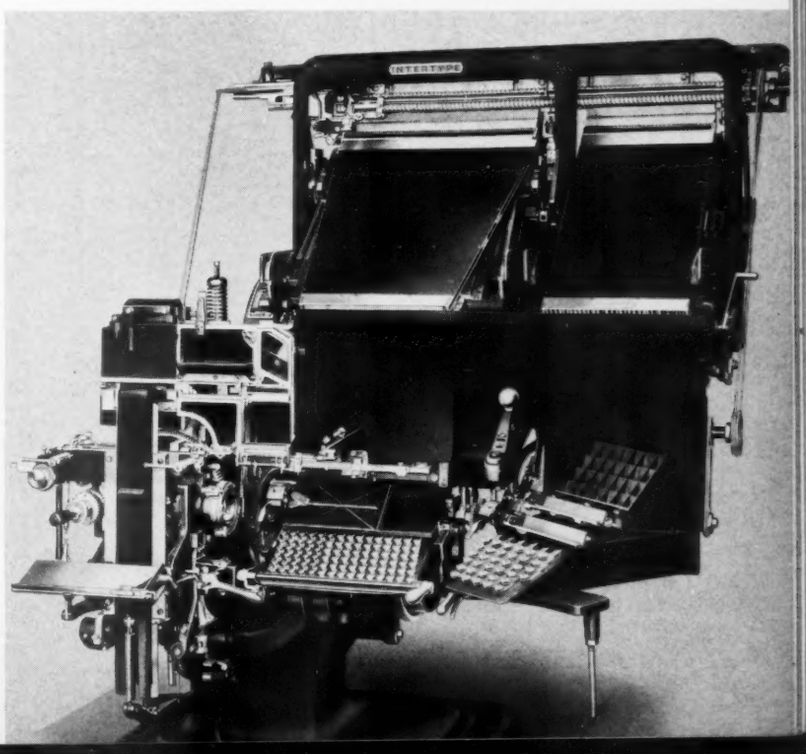
(3) The Model F mixer carries four standard 90-channel magazines arranged to mix from any adjacent pair, that is, 1-2, 2-3 or 3-4, or to mix from only the outside pairs 1-2 and 3-4.

(4) The Model G mixer is the most flexible of all in that it carries any one of three different combinations of magazines for combination text and display composition. The Model G equipment may be fitted with two pairs of magazines with a 72-channel magazine on the top of each pair and a 90-channel magazine on the bottom of each pair, to permit mixing from the 72-90 top pair or 72-90 bottom pair; or the equipment may be three 72-channel magazines above and one 90-channel magazine on the bottom to permit mixing from the bottom pair only; or finally, the equipment may be one 72-channel magazine at the top and three 90-channel magazines below to permit mixing from the top pair only.

Front Removal Magazines—Interchangeable On All Models

All Intertype magazines are freely interchangeable on any of the Four-Deck machines mentioned above as well as on other Intertypes. All magazines are removed and replaced from the front by means of a sliding carriage

*Patent and Research Engineer, Intertype Corporation, Brooklyn, New York.



View of Intertype's new Streamlined Model F Mixer—one of several new models announced by Intertype this month. Eight magazines are contained within a flexible shifting mechanism. The four main magazines are standard 90-channel size. These may be used in several operating combinations in pairs. The four auxiliary magazines carry 34 channels each.

Two of the new models carry four standard 90-channel magazines, one a single-distributor and the other a double-distributor machine. These are called Four-Deck Models C and F, respectively. Included in the group is a Four-Deck Model H, a display machine carrying four wide 72-channel magazines.

For text and display equipment, there is a Four-Deck Model G. This machine can be furnished with three different combinations of magazines—two for display and two for straight matter, or one for display and three for the smaller sizes, or one magazine for straight composition and three for display.

All magazines on all of the new models are removed and replaced from the front of the machine. All machines carry either full-length magazines or three-quarter or half-length "splits," and any of these kinds of magazines can be used in the first, second, third of fourth position on the machine.

A feature of the new Streamlined Intertypes is a new four-deck side unit in which the auxiliary or side magazines are stacked flatwise, the same as the main magazines, with a new arrangement for shifting from one magazine to another on the single-distributor machines or from one pair of magazines to another on double-distributor machines.

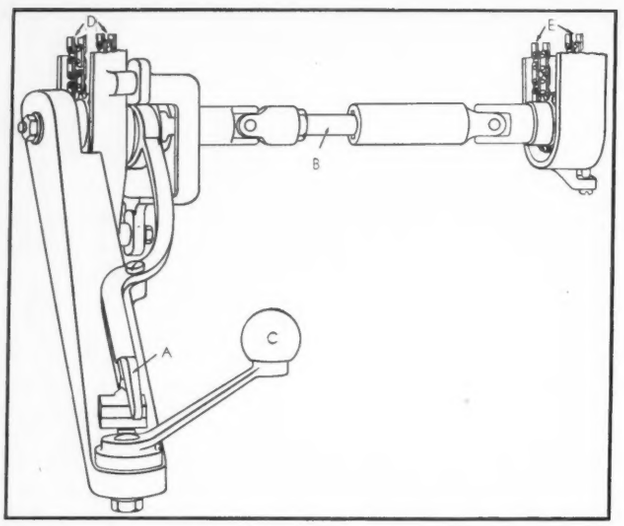


Fig. 1—Diagrammatic representation of magazine changing mechanism on the new Streamlined Intertypes. One turn of shift handle *C* changes the operating position of a magazine. Four complete turns of the shift handle make the complete shift from the topmost to the lowest magazine on the four-deck machines. When thrown to the right switch *A* operates a clutch on shaft *B* so that shift handle *C* will turn chain *D* for shifting the main magazine stack. When the switch *A* is thrown to the left the coupling is made between the shift handle *C* and chain *E* for shifting the side magazine stack.

on each magazine frame. Full length, three-quarter length or half-length "splits" can be used in any position in the magazine stack on any model.

New Side or Auxiliary Magazine Unit

For the new Streamlined Intertypes there has been developed a new side magazine unit in which the standard 34-channel auxiliary magazines, as shown, are stacked flat-wise like the main magazines and are removed from the front. Four-magazine mixers can be equipped with either a two or four-magazine side unit. With four side magazines, matrices can be mixed from the top or the bottom pairs. The side magazines are shifted from one pair to the other by the same handle that shifts the main magazines (see description below). The 34-channel side magazines carry matrices up to normal 36 point and condensed 60 point.

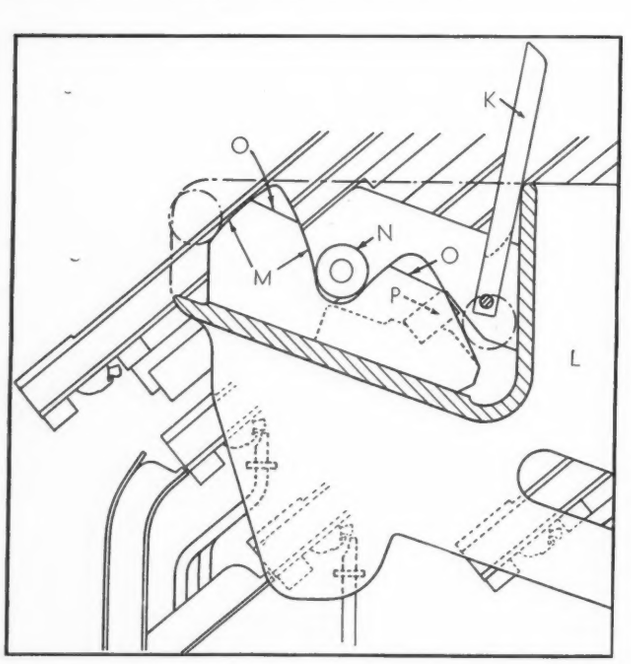


Fig. 3—Sectional diagrammatic side view of the magazine supporting and shifting mechanism on the new Streamlined Intertype Model F Mixer. The cam bridges *K* are turned back out of use. This allows the rollers *N* to travel over the lifting cams *M* on the side brackets *L* to guide each successive pair of magazines into operating position. Consequently, all three adjacent pairs of magazines (top, middle and bottom pairs) can be used for matrix mixing purposes.

Magazine Shift, One-Handle Control of Main and Side Magazines

For shifting magazines on the new Streamlined Intertypes, the same handle that shifts the main magazines is used also for shifting the side magazines. This one-handle control of both main and side magazines is accomplished by a simple clutch lever or switch located beside the shift handle which instantly connects either the main or side magazine stack to the shifting mechanism. Figure 1 shows the action of the shift handle *C* and switch *A* within easy reach of the operator seated at the keyboard.

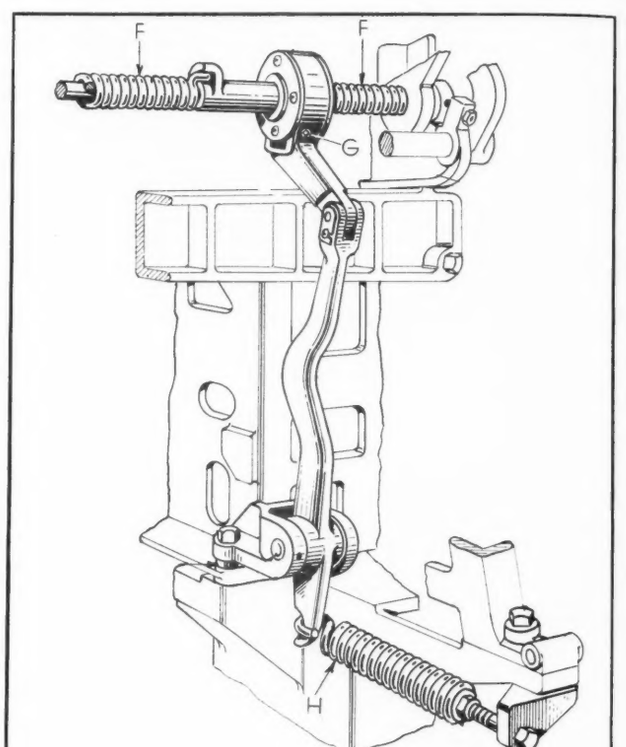


Fig. 2—The two torsion springs *F* and *F* counterbalance the forward end of the magazine stack and are adjusted by turning the tensioning worm *G* on the new four-magazine Streamlined Intertypes. The tension spring *H* balances the load as the stack is shifted fore and aft and is adjusted by turning the bolt *J*.

The former Intertype chain-shift construction is employed with certain improvements so that four effortless turns of the operating handle make the complete shift from the topmost to the lowest magazine on the Four-Deck machines.

On the Four-Deck Streamlined Mixers there is provided a lever which shows at the right and just below the main keyboard in the photograph. The squeezing latch on the handle of this lever operates the reed safety lock and also releases the channel entrance latch and magazine carriage latch. This permits shifting from one pair of magazines to another or moving the stack into position for removal of the bottom pair of magazines. Downward motion of the lever then opens the channel entrance and moves the lower magazine of the pair in use far enough back on its frame to clear the reeds.

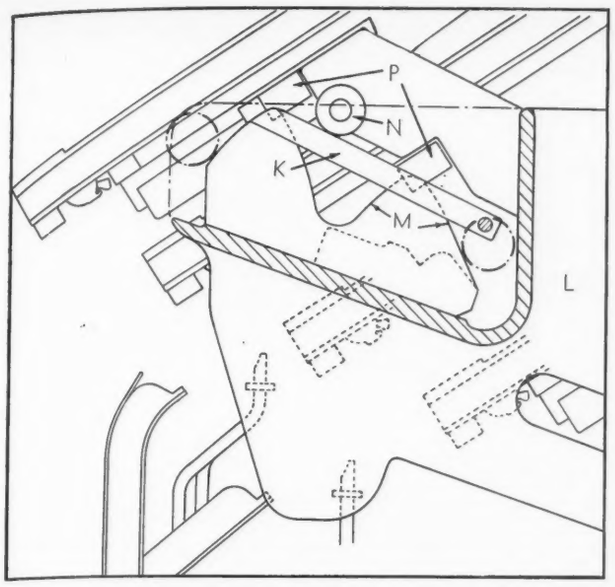


Fig. 4—On the new Streamlined Model F Mixer the cam bridges *K* are turned down on the seats *O*. (Shown in Fig. 3.) Rollers *N* will now travel over the bridges and allow the stack to assume only the front and rear operating positions. Now it will be seen that only the top and bottom pairs of magazines can be used for mixing matrices from either magazine in the same line.

After shifting the next desired pair of magazines into operating position, the lever is raised to close and lock the entrance and seat the lower magazine forwardly in its normal operating position.

Magazine Counterbalance

The new Intertype magazine counterbalance system is simple in construction. Even with the greater load on the Four-Deck machines the magazine shifting action is lighter and smoother than before. The construction and adjustments will be seen by looking at Figure 2. At the top are the two torsion springs *F* for counterbalancing the forward end of the magazine stack and at the bottom is a tension spring *H* which balances the load of the frames and magazines as they shift horizontally along the supporting tracks. These springs are adjusted when the magazines and matrices to be used are in place and with the stack in position for removing the bottom magazine.

Selective Mixing from Adjacent Pairs of Magazines or Outside Pairs Only

Four-magazine mixer machines, when equipped with four 90-channel magazines, permit mixing from any adjacent pairs of magazines or from the top and bottom pairs only. A simple selecting device is provided in order that either arrangement may be used, as desired. Figures 3 and 4 show this device which comprises cam bridges *K*, one hinged on each of the side brackets *L* near the front of the machine. These bridges are adapted to swing into and out of cooperation with the lifting cams or tracks *M* on which the front end of the magazine stack rides as it is shifted fore and aft.

When the cam bridges *K* are swung back, as in Figure 3, the stack supporting rollers *N* guide the stack successively into all three operating positions corresponding to the adjacent pairs of magazines 1-2, 2-3, and 3-4. When the cam bridges are swung down on the seats *O*, the supporting rollers *N* travel over the bridges and guide the stack into only two operating positions corresponding to the top pair of magazines 1-2 and the bottom pair 3-4. In every instance the usual lugs *P* at each side of each magazine frame retain the active magazines firmly and accurately in operating position.

Finger-Tip Changes From One Font to Another on Mixers

A new feature on the Four-Deck Streamlined Mixer machines is the feather-touch reed shift lever for instantaneous changes from one font to another. This lever carries an indicator to show which magazine, upper or lower, is in use. It is located at the left of the main keyboard where it can be flipped with no more effort than touching a key. On machines with side unit equipment, a lever exactly similar in operation and appearance is provided at the left of the side unit keyboard.

The mechanical action that takes place when this feather-touch lever is operated is direct and simple. It involves nothing more than a slight swinging movement of the reed rack.

101 New Features of the New Streamlined Intertypes

In creating the Streamlined Composing Machine, practicability and efficiency as well as distinctive appearance have been considered. For easy maintenance, cleaning and inspection accessibility has been preserved and surfaces heretofore irregular and awkward to clean have been made smooth. The improved base and the one-piece distributor bracket on side unit machines gives greater stability and rigidity to the whole machine. The dull-black grained alumilite magazines prevent corrosion, are easy to handle and are easy to keep clean. The flush-set covers across the front provide a restful field of vision before the operator, prevent dust accumulations around the assembling and keyboard mechanisms and are hinged for easy accessibility.

The more apparent details in the design of the Streamlined Intertypes have already been described in this article. They are, however, only a few of the 101 features embodied in this new series of machines and listed elsewhere in this issue. They are all devoted to constantly improving performance and expanding the flexibility of the machines, simplicity of design and operation. The new Four-Deck mixers, in spite of the additional pair of main magazines, employ the same double-distributor, matrix selecting mechanism and single-distributor box as used on the two-magazine Intertype mixers.

Two-Letter 24-Point Matrices

Two-letter matrices for line composing machines have, until recently, been limited to sizes up to and including 14 point only. The sizes in which two-letter matrices are now available have been extended by Intertype Corporation to include 18 and 24 point. According to information released by Intertype these two-letter display faces will include both Roman and Italic as shown below as well as other combinations.

2-Letter Mats
2-Letter Mats

Other combinations will include 24 and 18 point or 14 point advertising figures for use in composition where a great variety of figure sizes are required in the main or auxiliary magazine.

Largest Hoe Color Press

By STAFF WRITER

With complementary precision plate-making equipment has been installed and is now in use at Cleveland Plain Dealer.

THE installation of what is said to be the largest Hoe Super-Production Multi-Color Newspaper Printing Press ever built has just recently been completed in the plant of the Cleveland *Plain Dealer*. Included with the press installation is a complete complementary precision plate-making equipment. It is said this particular equipment is the culmination of the spending of many thousands of dollars by R. Hoe & Co., Inc., in developmental and research work.

In speaking of this equipment, John S. McCarrens, Vice President and General Manager of The Plain Dealer Publishing Company, whose company has made an extremely large capital investment, affirmed his belief that America is marching forward and progressive American newspapers are participating in that march. It is his determination that the *Plain Dealer* shall maintain its place as one of the foremost newspapers.

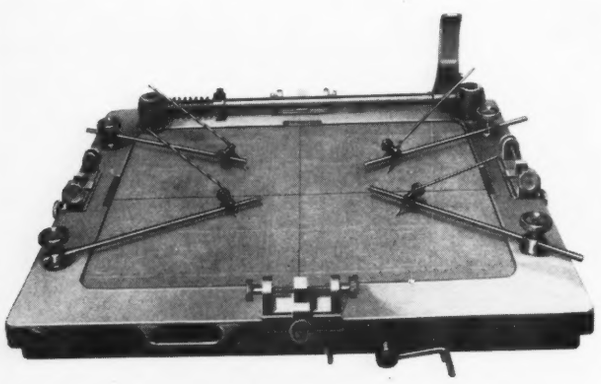


Fig. 1—View of Hoe Register Rack which is used to position a set of stereotype dry mats for newspaper color work so that when the mats are placed in the Hoe Vacuum Casting Mold, all plates bearing parts of the design for the various colors will be cast to an exact predetermined position. After removal from the mold, each plate is shaved and trimmed in a special machine, shown in Fig. 4. The trimming of the plate is exactly controllable in relation to the design on each plate by the means provided when marking the mat in the Register Rack shown in Fig. 1.

Maintenance Superintendent H. J. Graham stated that the press consists of twenty-six pairs of solid forged steel printing cylinders, a double-former double-delivery newspaper folder with upper formers and provision for a stitcher. The paper is fed to the press by four Hoe Three-Arm Reels equipped with Automatic Electrically-Operated Running-Belt Tensions and Full-Speed Pasters.

The press is geared for a running speed of 40,000 papers per hour. The motor equipment consists of two 150 h.p. two-motor drives with full automatic control supplied by the Cutler-Hammer Company. Because of the high running speed and the continuous operation afforded by the pasters, Mr. Graham states a very large net production is obtained.

The principal product to be obtained from the press which is under the direct operating supervision of Allen Brown, is a 16-page full-size comic section with all pages in four printings, and a 16-page magazine with eight pages in four printings and eight in one, both folded together and delivered in half-page size. Provision is made, also, for the printing of four-section products with varying number of pages in each section, stitched and unstitched tabloids and the addition of future couples and reel as needed.

The comics and magazines, now produced simultaneously on the new press, formerly were printed separately. The magazines were printed on the Hoe 15-couple color press at the Cleveland *News* and the comics were printed on the now replaced Hoe 20-couple color press at the *Plain Dealer*. In combining these separate operations, production economies were effectrd by the elimination of cartage and stuffing and the unification of control. In addition, a saving of about 11% newsprint is obtained by reducing the page length to the standard comic size of 21½ in. and the length of the paper rolls to 62 in.

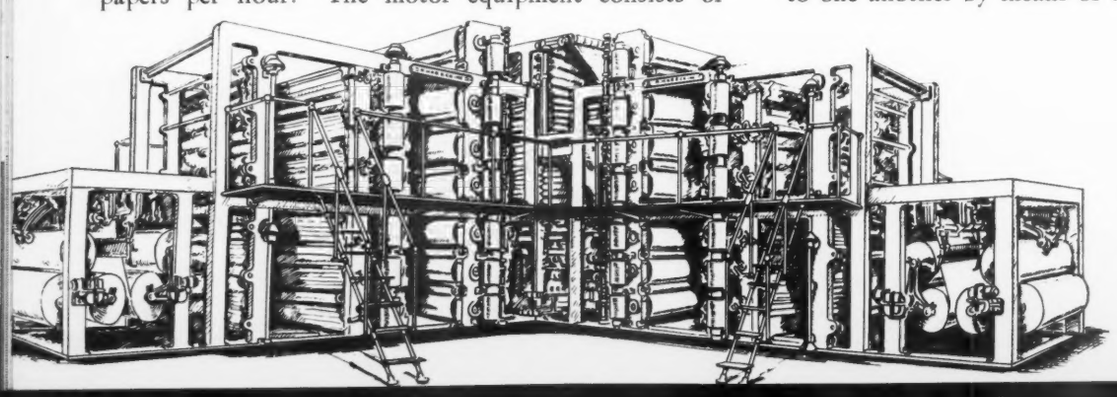
A description of this new plate-making and press equipment will be of interest to newspaper production and mechanical executives. The data compiled below has been obtained from two sources: *Plain Dealer* executive personnel and the manufacturers. The descriptive continuity corresponds with operational sequence.

Color Work Lies in Two Groups

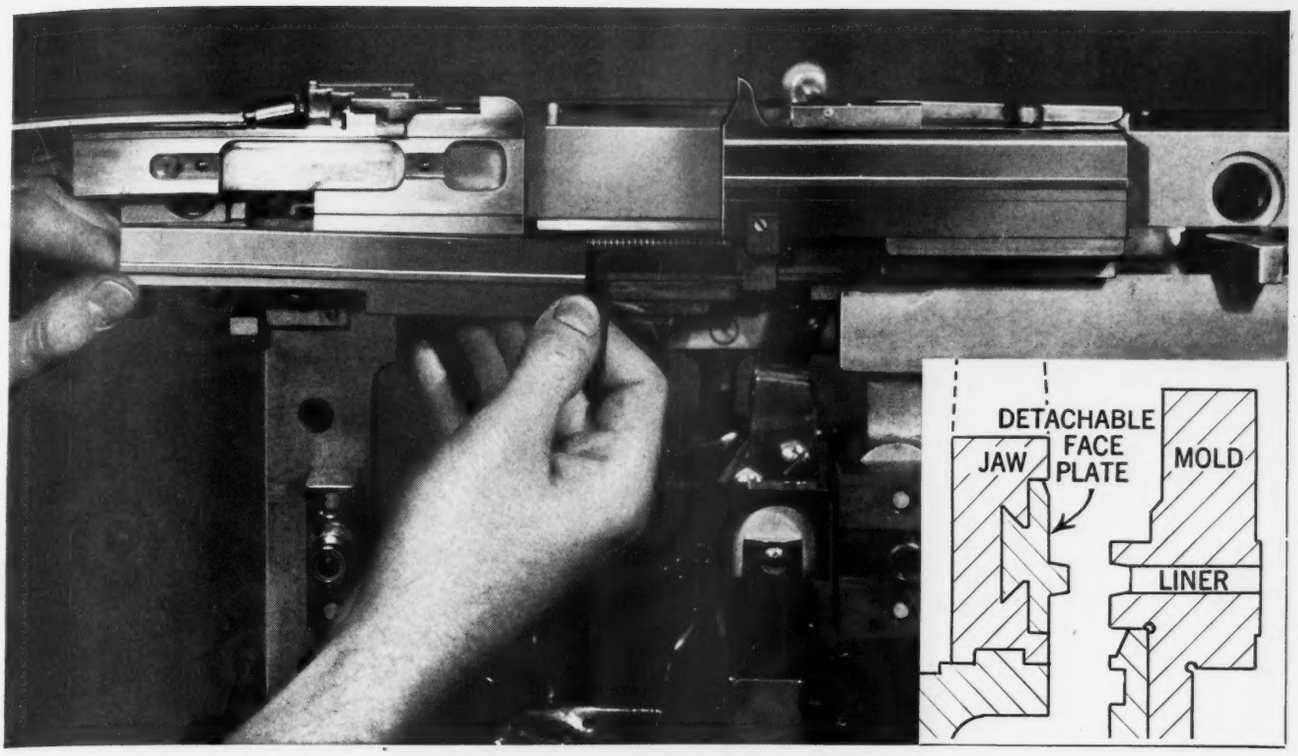
Newspaper color work such as is produced at the *Plain Dealer* may be divided into two groups—that which originates in the form of syndicate mats at some outside source and the color work which originates within the newspaper plant itself. Syndicate mats, coming from various sources, differ in every conceivable way from the mats made regularly in a newspaper plant. The solution to the problem of obtaining uniformity of registration, according to the manufacturers, is to so treat the different mats that plates of definite size and mechanical characteristics will be cast from them so the plates in subsequent operations can be handled by production methods instead of pampering them as individuals.

The Register Rack

In the case of color syndicate mats, the various mats for color plates are registered in exact position in relation to one another by means of the Hoe Color Registering



Diagrammatic representation of Hoe Newspaper Color Printing Press in plant of Cleveland *Plain Dealer*. The press is geared for a running speed of 40,000 papers per hour.



Linotype LOW-SLUG Quadding

Low-Slug Quadding is an optional feature of the Linotype Self-Quadder. It can be supplied where a lower shoulder on the slugs is desirable to prevent smudging on the press or to form a base for engravings. Low-Slug Quadding, as provided on the Linotype, is very simple. Low mold-liners are provided and the face of the jaw carries a ridge which fits into the mold, leaving a low shoulder on the blank end of the slugs. In changing from one size to another, only the liners and the detachable jaw face plates are changed. The face plates are held in place by cleats which fit into slots in the jaw. They slip in and out in a second. No tools needed.

TRADE LINOTYPE MARK

MERGENTHALER LINOTYPE COMPANY

BROOKLYN, NEW YORK

NEW YORK CITY · SAN FRANCISCO · CHICAGO · NEW ORLEANS

CANADIAN LINOTYPE, LIMITED, TORONTO, CANADA

Representatives in the Principal Cities of the World

LINOTYPE MEMPHIS FAMILY

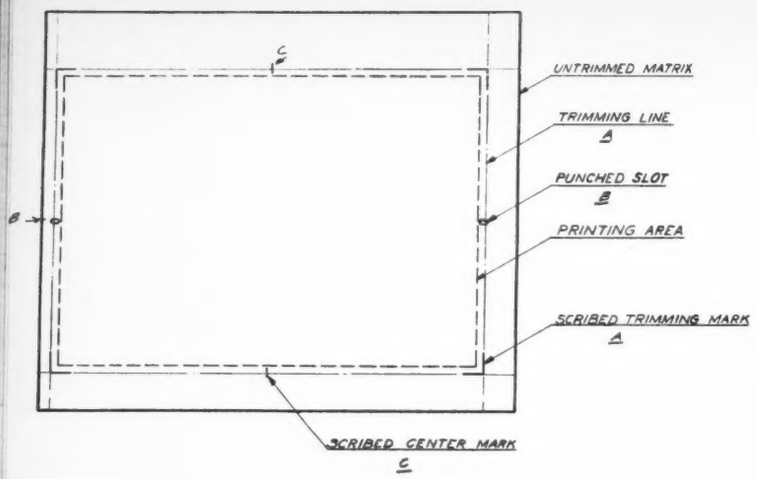


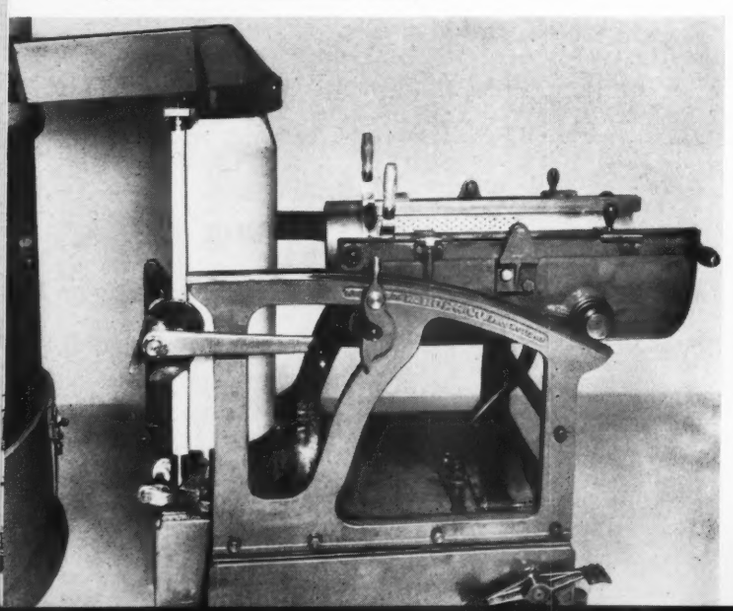
Fig. 2—Plan diagram to show how color mats are marked and punched in the Hoe Register Rack so that when placed in the vacuum casting mold, all plates will be in register.
The scribe marks *A* indicate the lines along which the mat is to be trimmed, so that it will fit properly under the recesses of the side gauges in the casting mold. The holes *B* fit over corresponding pins in the mold, located under these side gauges, and either of the scribe marks *C* lines up with a corresponding mark in the head gauge to locate the mat accurately in the mold. Parts of the marks *C* being reproduced in the non-printing area of the plate also are used to locate it on the side beveller described below.
This rack also provides a means of determining the "fit" of a set of color mats. The design can be located to the best advantage so discrepancies in register will be least noticeable if the mats are useable, or the rack can be used for determining immediately that the mat is not useable and can be discarded before any time is wasted on it.
For that color work which originates and is to be locked-up in the plant, chases can be supplied so the rolling of the mat will reproduce the same markings.

Rack shown in Fig. 1. The registering rack consists of a substantial box-like cast iron frame to which is hinged a spring-counterbalanced lid.

Registering the Mat

In practice, the mat is marked outside the printing area with horizontal and vertical center lines. It is then placed underneath the lid and these center lines brought in coincidence with corresponding lines on the frame. The adjustable pointers extending from the frame into the printing area are brought into position over selected registering features in the mat and locked. The mat is scribed at the points indicated and elongated holes are punched in the sides of the mat as indicated at *B* in Fig. 2. The remaining mats in the set for the various colors are registered in the rack one at a time to conform to the position of the key mat which was registered first. These succeeding mats are scribed and punched exactly like the key mat.

Fig. 3—Note the holes in the cover of the Hoe Vacuum Casting Mold. Through these holes a vacuum of approx. 25 in. is exerted upon the mat to hold it snugly against the inside surface of the cover so as to insure maximum level printing surface in the plate which is cast from the mat. Note, also, the insulating material (dry mat stock) wound on two reels (only one of which is shown in the illustration). This insulating means prevents the rapid escape of heat through contact of the stereotype metal with the cast iron wall of the mold bed. Metal is pumped from the metal pot through an electrically-heated spout held at a pre-determined temperature. The rate of flow and quantity of metal permitted to pass through the pump at the time of casting a plate likewise are controlled exactly.



Casting the Plate

After the mats have been properly molded, scorched, registered in the rack and trimmed, they are ready for the Hoe Water-Cooled Vacuum Curved Casting Mold which is a part of the plate-making equipment.

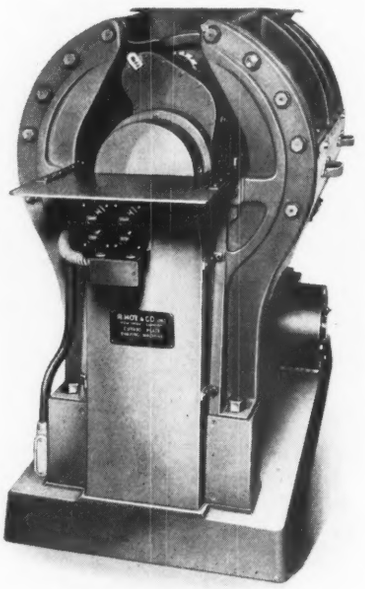


Fig. 4—This is a front view of the Hoe Combined Precision Curved Shaving and Cutting-off Machine.

The casting mold is fitted with an electrically-heated spout which is held at a predetermined temperature. The rate of flow and amount of metal permitted to pass through the pump for each cast are controlled exactly.

To insure all mats being placed in the same position in the mold, the registering marks placed on the mats as described above, are matched with corresponding marks in the mold.

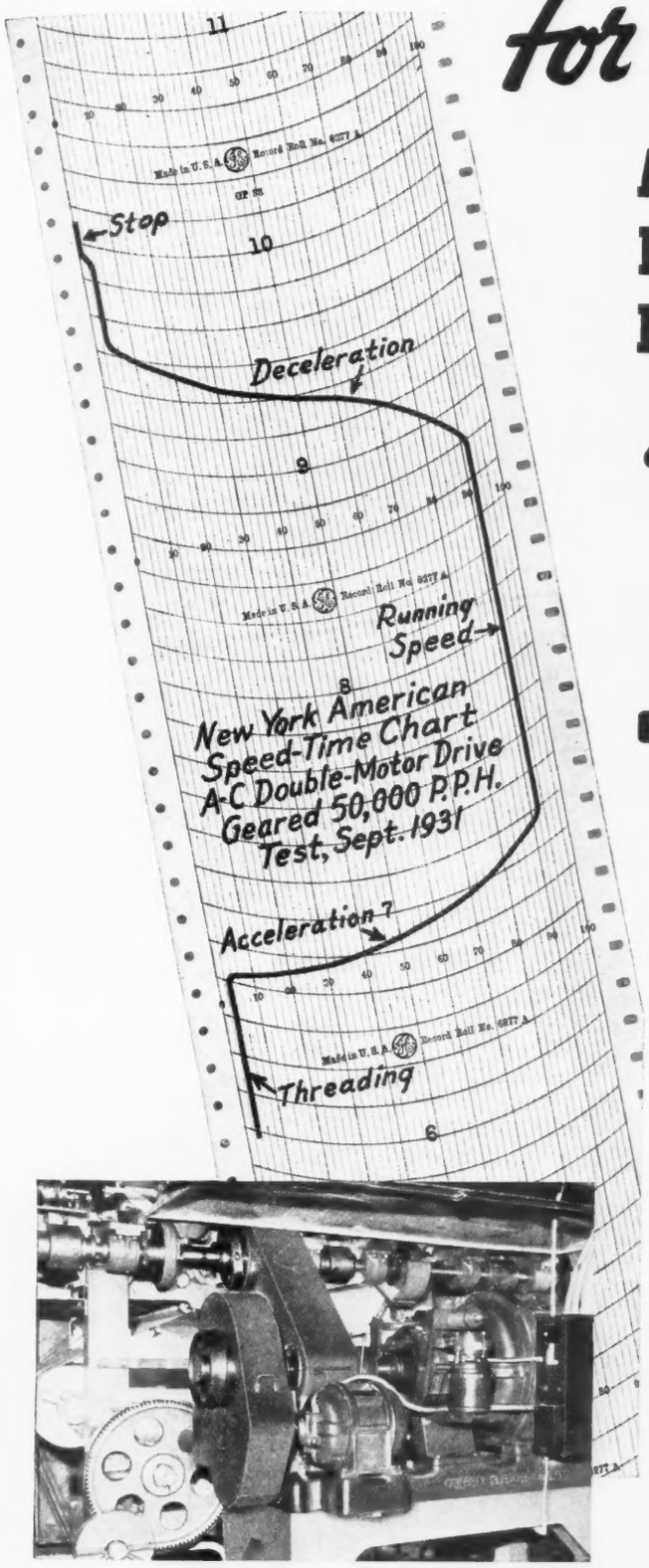
The mat is held to its correct position and curvature under 25 in. of vacuum. The holes in the mold cover, by means of which the vacuum is applied, are so small and placed in such a pattern that they do not reproduce in the plates.

Insulating strips are recessed into the core of the casting mold at the outer edges and the entire core is covered with insulating material (dry mat stock) attached to reel rods, both acting to prevent the rapid escape of heat through contact of the stereotype metal with the iron of the mold. In the *Plain Dealer* stereotyping department the dry mat stock is serviceable for a 30-day period, according to H. F. Poehlman, who is in charge of the department.

The water in the core is applied at a point corresponding approximately to the center of the plate. A thermostatically-controlled water valve with hot water mixer, replacing the manually-operated valve, can be supplied. This acts to automatically keep the water in the casting mold at the correct temperature by casting an intake of cool water as needed. Furthermore, it prevents the

(*Continued on Page 42*)

A PRECISION RECORD CERTIFIES EVERY G-E PRESS DRIVE



One of six 200 hp G-E a-c double-motor press drives in plant of large metropolitan daily

For Example

ACCELERATION
DECELERATION
RED-BUTTON STOPS

Exactly as Specified

"General Electric a-c press drives excel in performance"

WHEN a G-E representative makes this statement, whether it be in Miami, Dallas, Portland, or Toronto, it is backed by years of painstaking effort in determining exactly the most desirable qualities for the best performance—and building these qualities into General Electric press drives. The chart illustrated on this page is just one sample of the overwhelming proof available.

If you are installing new high-speed presses, or if you contemplate changes in your pressroom equipment, ask your local General Electric representative to have a G-E printing-press drive-and-control specialist call on you. You owe it to your publisher to do this.

Because of the developments made by G-E printing-equipment engineers, it is now unnecessary for you to purchase any type of costly, space-consuming conversion apparatus, and it is unnecessary for your operating staff to worry about and maintain sliding contacts that were a source of trouble with previous a-c equipments until the G-E development of contactor-type control eliminated them.

This is only a small part of the complete story. You can get the full story from a specialist merely by asking for it. General Electric Company, Schenectady, N. Y.

011-183H

GENERAL ELECTRIC

Appliance Engineering Necessary

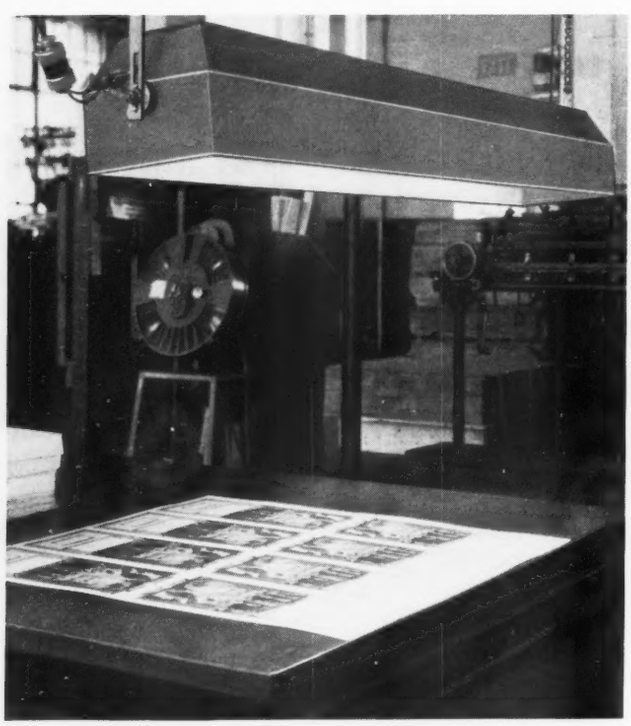
By ADAM HENRY REISER

Plant executives in printing industry need to be made light conscious—Result: Lighting manufacturer will respond.

"LITHOGRAPHY Is An Art" was popularized by the Fuchs & Lang Co., many years ago. That slogan in conjunction with the art display at their office, did much to advertise lithography. And while the idea is an old thought, it may be accepted as gospel truth even in this day of greater mechanization and standardization. Yes, despite all this, the skilled artisan, whether it be in the camera, art, platemaking or press department, still is a predominating factor. As an added thought this observation applies in the letterpress section of the printing industry.

Lighting Facilities

There has been a move toward greater standardization of methods. But most certainly there should be a greater standardization of machines and equipment than that



View of section of pressroom in plant of the Maqua Company, Schenectady, New York. In this view is shown one of the trough boxes with 300 w. daylight units on 12 in. centers over the inspection table. The trough boxes used in this plant are of various lengths to suit the needs of the purposes for which they are used.

which we enjoy at present. Of course lithography's auxiliary equipment has always been comparatively of the crudest type. The photoengraver has equipment that is far more efficient, practical and at the same time built along more modern lines than that which enhances the lithographic establishment. That applies also to light appliances.

No matter in what industry lighting is considered, a real problem presents itself. In lithography, the lack of simple standards in lighting, for illustration, is emphasized when considerable thought is given to laying out a plant. Recently, during the organization of a new platemaking, art and camera department, the interesting existence of a woeful lack of the scientific methods of lighting was disclosed.

No greater proof of this can be found anywhere than in the lithographic camera room or dark room. Have you ever felt your way through dark rooms? Do you realize the many light-control arrangements possible? Picture any dark room. As you enter it, there is a toggle switch at about knob height to control the ceiling general lighting or even the safe light, isn't there? Oh, yes. You may find a pull chain after what seems hours of feeling your way about. Or, perhaps you may have to turn a bulb into a socket. Then again you may have to snap a socket switch or a wall switch. It is undoubtedly safe to say there are no two identically arranged dark room lighting systems where other things are fairly even. And of course, that applies to other pieces of equipment besides the camera.

Research in Illumination

Recent issues of *Printing* Equipment *Engineer* carried transcripts of a research made on industrial lighting by a Committee of the Illuminating Engineering Society. That work is extremely important in the writer's mind. An old axiom in psychology on the feeling of sympathy may be the reason for this opinion. Without the experience of pain there is said to be possible no feeling of sympathy. Somewhat like that is the appreciation aroused by the light survey. Standing over a light table looking down at glaring lights will bring a realization of the eye strain and eye fatigue produced by such exposure to unshaded light. On the other hand, it is well known that dim light or hardly any light at all will bring great fatigue, lower efficiency and increase accidents, probably more so than any other factor. The lighting research makes provision for the elimination of these annoying and troublesome causes. Certain ideal fixtures were advocated. There is a world of wisdom behind most of the recommendations and devices suggested for the various operations. *But try to get those fixtures*. Most of them must be made up specially.

Artificial Daylight Lamps

Another interesting point was brought to light during our installations concerning lighting for the litho artists. You know how painstaking the photographer is in the making of his color separations. He uses the right type of photographic plate, the correct filter or combination of filters, the proper number of stops, right kind of light, developer and what not to get optimum results. Then the glass is given over to the artist who looks at the copy under artificial light (very often), interprets the color value in the copy into dot value, as he sees it under the light, onto the photographic plate.

When printing takes place from a press plate made from the corrected negative, and this printing is examined under daylight, or perhaps half-daylight, with a result that even fails to approximate the sketch, who is blamed? The artist of course cannot visualize color is often asserted. But is anything said about the light

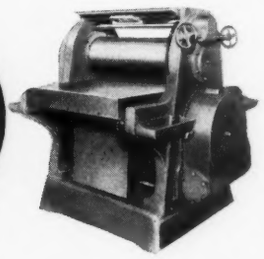
(*Continued on Page 40*)

Here's how . . . .

to improve your printing

with Hoe Precision Plate-Making Machinery

1 MAKE A BETTER MAT

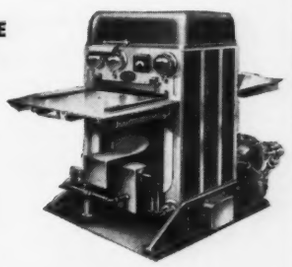


MONARCH ROLLER-BEARING MATRIX ROLLER

Designed for the speedy production of high quality mats, it can be operated from either end and run at fast or slow speed. There are no operating levers. Control is entirely push-button electric.

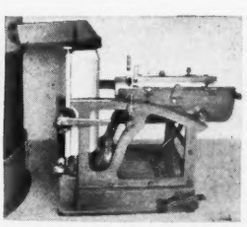
HOE DIRECT-PRESSURE MATRIX MOULDING PRESS

Speedier mat moulding, deeper impression of engravings, more exact color register and remarkable simplicity of operation are the features of this recently introduced Hoe design.



2 CAST A MORE ACCURATE PLATE

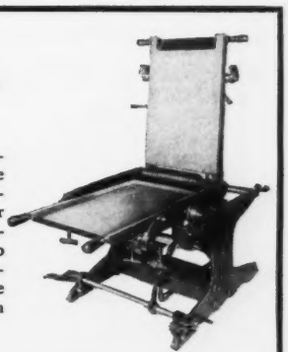
HOE VACUUM CURVED CASTING MOULD



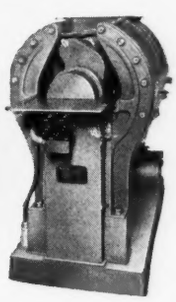
This mould, arranged with vacuum in the concave section for holding the mat in its correct position, conforming it exactly to the curvature of the mould, reduces to a minimum the sinks and irregularities which so often appear in plates cast in ordinary moulds. When used with the Hoe thermostatic arrangement for automatically controlling the flow of cooling water to the cover it will give the best possible results.

HOE VACUUM-TYPE SPEED FLAT CASTING MOULD

This mould equipped with vacuum in the bottom holds the mat securely against the casting members producing better type faces and a more accurate plate. This mould also embodies all the "Speed" features of the Standard Hoe 5-Column and 8-Column Speed Mould.



3 FINISH IT WITH GREATER PRECISION

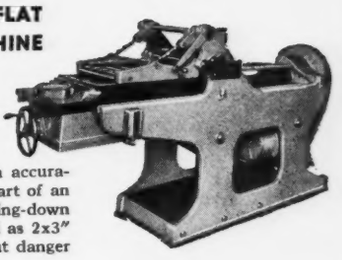


HOE PRECISION CURVED SHAVER AND CUTTING-OFF MACHINE

A precision machine designed for the utmost operating convenience and safety. Ultra-modern design includes anti-friction bearings throughout, automatic stop and push-button control. Shaves plates rapidly to extremely close tolerance and cuts tails in one operation.

HOE PRECISION INCLINED-BED FLAT SHAVING MACHINE

A machine built with precision to do precision work. Will shave plates as thin as .062" and full width without buckling, with an accuracy of a thousandth part of an inch. With the holding-down rollers plates as small as 2x3" can be shaved without danger of tipping the plate.



Modern, efficient plate-making machinery offers a practical means of cutting makeready time and improving printing quality. If you are now working with older equipment, let us show you the latest features which speed up plate-making and assure an accurately finished plate and at the same time increase production. These improvements reach their highest level of efficiency in the Hoe Line.

Write for additional information.

R. HOE & CO., INC. General Offices: 910 East 138th Street (at East River), NEW YORK CITY

BOSTON SAN FRANCISCO CHICAGO BIRMINGHAM LONDON

HOE *Precision* PLATE MAKING MACHINERY

Public Printer's Report

By STAFF WRITER

Hon. A. E. Giegengack comments on technical advances made at G. P. O.

IT IS to be understood Public Printer A. E. Giegengack's Annual Report to the United States Congress consists principally of operating and production data, but in these brief notes about that Report, we are commenting only on some of the technical matters which will be of interest to our mechanical and production executive readers.

"Universal" Metal Formula

In the Report, Mr. Giegengack invites attention to the fact that the single metal formula adopted a year ago for use on all type and line-casting machines and for the making of stereotype plates has proved entirely satisfactory. Prior to the adoption of this new metal, which has been designated "Universal," five different metal formulas were used on Intertypes, Linotypes, Monotypes, Ludlows and Stereoplate-making equipment. The formula for the Government Printing Office's "Universal" metal consists of 6 percent tin, 12 percent antimony, and 82 percent lead. The Public Printer reports the adoption of a single metal formula has simplified the problems of the Composing and Platemaking Divisions when it is realized that during the past year nearly 10,000,000 pounds of type metal were standardized for the work of the Office.

Paper Delivered on Skids

In the proposal for paper for the public printing and binding and for blank paper for use by the several executive departments and independent Government establishments located in the District of Columbia for the six-month period beginning January 1, 1937, a provision was inserted for the delivery on skids, instead of in wooden cases, of over 18,000,000 pounds of book, lithograph, mimeograph, sulphite writing, sulphite bond, and 25 percent rag bond papers. The delivery of paper on skids instead of in wooden cases as heretofore will result in an estimated saving of over $50,000 annually in the basic cost of the paper. In addition to this saving the expense of breaking up and removing packing cases will be eliminated, and there will be less waste resulting from damaged paper delivered in wooden cases, because there will be no nail holes or wrinkled paper in skid deliveries.

Deposition Time Reduced

The Public Printer states:

Routine control of electrotyping solutions and raw materials was continued. Although production was unusually heavy during the year, no trouble was experienced with equipment.

The temperature of the acid copper-sulphate solution in the semi-automatic tanks was raised to 95 deg. F., the amount of sulphuric acid increased from 75 grams per liter to 80 grams per liter, and the specific gravity of the copper-sulphate solution increased from 1.175 to 1.180 to facilitate more rapid deposition of the copper shells. In a few rush jobs the time of deposition of the shells was reduced, under these conditions, from the usual 55 to 60 minutes at 7 volts to 20 minutes at 10 volts.

Roller Lubricant

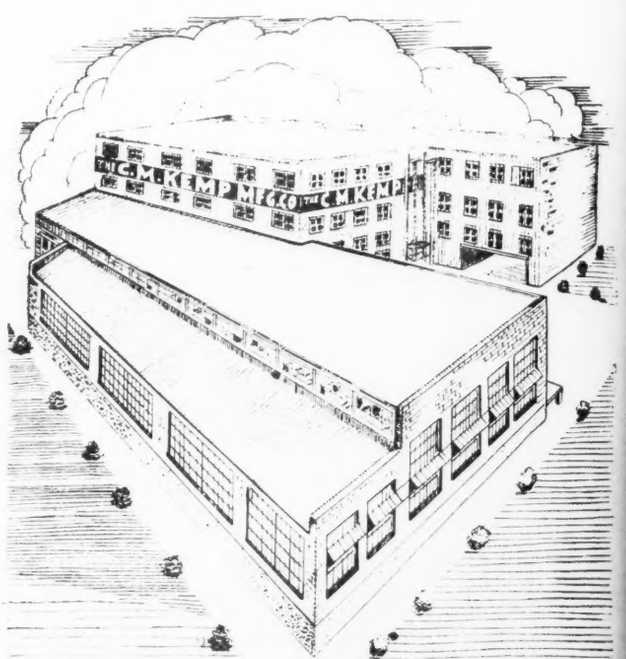
A roller lubricant has been developed to prevent press rollers from cracking due to the drying of inks on the ends when not in use while running short forms. This has been utilized during the past year with very satisfactory results and has increased the durability of press rollers.

Glue Investigation

The study to determine the effectiveness of using glue of a high-jell strength and high viscosity, which was started last year, was continued. As a result of this study two of the three grades of glue formerly purchased have been eliminated from use and only one grade retained. This change to a higher grade of glue has resulted in requiring less glue in the formulas to produce effective adhesion in bindery use. The general use of this high-jell-strength glue has also assisted certain machine operations and speeded up the rate of production. An example of this is the work accomplished on one of the case-making machines, which, due to the better working qualities obtained with the new type glue, can be operated at a higher rate of speed and with less delay due to the necessity of hand repairing of improperly glued covers. Therefore, although the cost of this glue is somewhat higher than those of lower jell strength, its use has resulted in considerable economy to the Office, and the formulas for flexible glues for bindery use have been modified to permit the economical use of this high-jell-strength and high-viscosity glue as based upon its best performance in bindery operations.

Leather Investigation

Research work by the Bureau of Chemistry and Soils has shown that both chrome-tanned leathers and combination vegetable-chrome-tanned leathers are more resistant to acid rot than leathers of a straight vegetable tannage, the latter type alone having been used for bookbinding. Accordingly, a specially made lot of chrome-tanned sheepskin leather was purchased by this Office to determine the possibility of its substitution in binding operations for the long-used vegetable-tanned law sheep leather, which is usually lacking in durability. This leather was found to lend itself readily to the various operations of the bindery, and it is, therefore, planned to give further consideration to tannages of this character.



Expanding business, resulting from constantly increasing demand for Kemp Immersion Heating and other products for industry, has necessitated the plant enlargement of the C. M. Kemp Manufacturing Company in Baltimore. The new building shown above will be a one-story, steel and brick structure, covering 7200 sq. ft. It will be used for the recently expanded welding department and for heavy machine assembly. Erection is starting at once.

WARD HOWARD SAILS

Ward R. Howard, Vice-President, The Howard Paper Company, boarded the Santa Paula of The Grace Line on January 9 for an extended tour of Central and South America. It will be a combined pleasure and business trip. Mrs. Howard will accompany Mr. Howard on the trip.

KEY MEN ARE BANQUETED

Officials and key-men of the Howard Paper Company organization were guests of Vice President Ward R. Howard at their 17th annual banquet and get-to-gether at the Douglas Hotel in Urbana, O., recently. Included among the 80 men present were also officials of the three other plants of the Howard organization: The Aetna and Maxwell paper mills at Dayton and Franklin, Ohio, and the Dayton Envelope Co.

POWER OF THE PRESS

The first requirements of good printing are uniform impression and uniform ink distribution.

Both are achieved in the design of the Miehle Horizontal. The impressional mechanism with powerful overhead eccentric applies an even pressure over the entire form, insuring fine presswork with a minimum of make-ready.

The excellent inking qualities and precision register, as well as the smooth, automatic operation of the Miehle Horizontal, all contribute to its high standard of production.

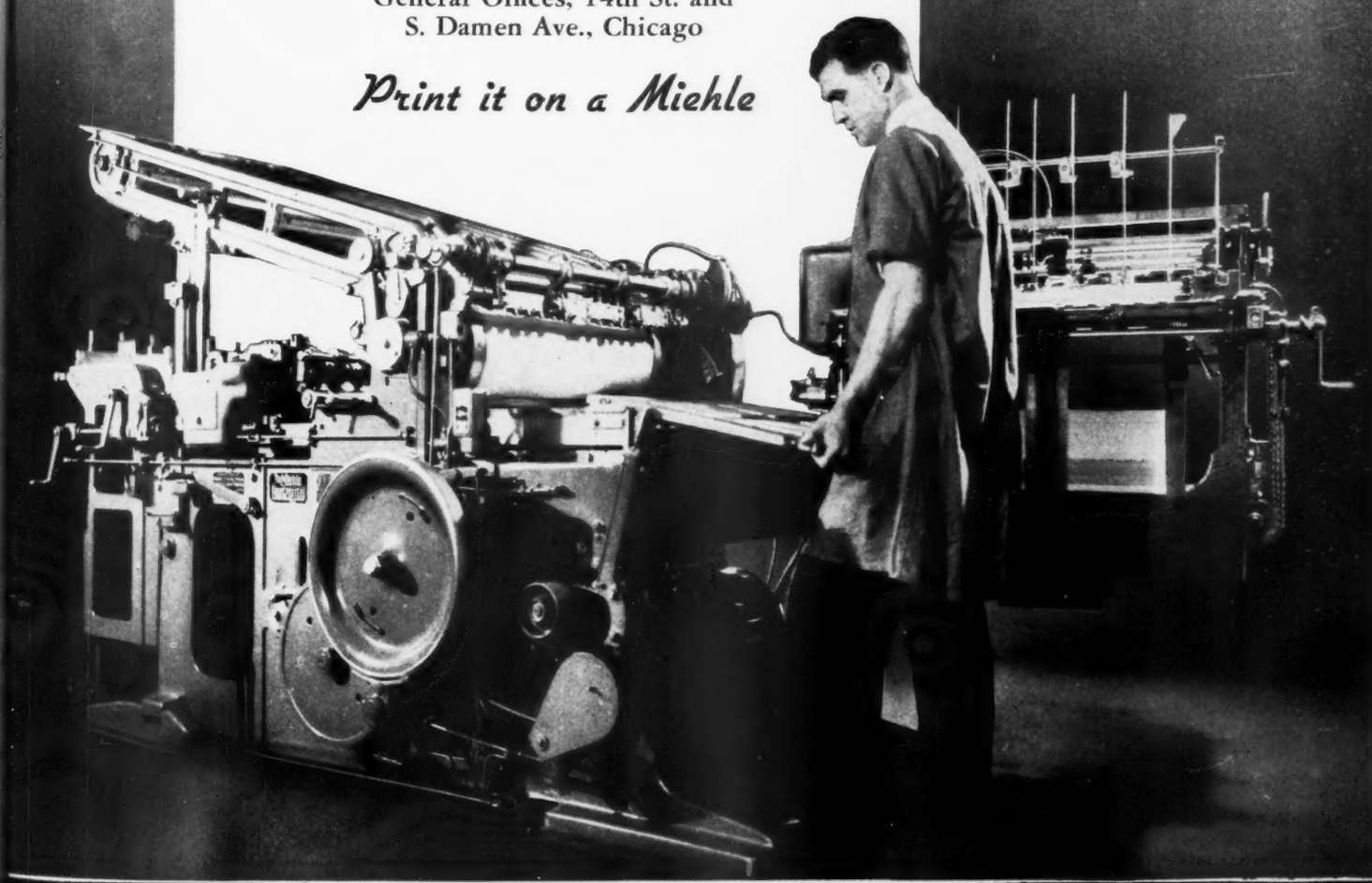
Sheet sizes 8½ x 11 to 22 x 28 inches
Speeds from 2000 to 3600 per hour

Now on display in our Demonstration Rooms at the General Offices, 14th St. and S. Damen Ave., Chicago

Print it on a Miehle

Powered by
KIMBLE
MOTORS

The feeder and delivery swing open readily, giving complete access to the press.



MIEHLE PRINTING PRESS & MFG. CO.

CHICAGO NEW YORK

SALES OFFICES IN PRINCIPAL CITIES

Cincinnati's Worst Flood

By STAFF WRITER

Emergency handled by Rapid Electrotype without interruption of service.

G. W. Kaufman, President of The Rapid Electrotype Company, states that during the trying time of the recent Ohio River flood it was necessary to shut down the Cincinnati plant due to lack of power and water. In order to surmount production difficulties caused by the flooding waters, Mr. Kaufman and company executives arranged to handle the larger orders for electrotypes, stereotypes and mats at Rapid's Detroit and New York plants, both of which were put on a 24-hour operation basis.

"During this time," says Mr. Kaufman, "large national advertisers placed orders with Rapid to meet nation-wide publication dates. To continue the usual Rapid efficiency under these adverse conditions, we transported 38 men consisting of all foundry key-men, office help and our entire shipping department to our Detroit plant.

"Four Rapid trucks were used in a daily caravan between our main plant and Detroit, transporting pattern plates from our files, as well as uncompleted work that was in our Cincinnati plant at the time of the shutdown. Due to the close cooperation of all employees in our various plants, we are proud to state that all campaigns went out with a minimum amount of delay and, to the best of our knowledge, all insertion dates were met."

It was thought operations in Rapid's Cincinnati plant could be resumed on or about February 5.

TEMPORARY SUSPENSION

The manufacturing plant of the Printing Machinery Co., although located in downtown Cincinnati, is well outside the devastated flood area. Because of the lack of electric current and water, officials of the company state, it has been necessary to suspend operations. Emergency requirements of customers, however, will receive attention from the company's New York and Chicago offices and from dealer stocks.

ACQUIRES CLAYBOURN

C. B. Cottrell & Sons Co., Westerly, R. I., manufacturers of magazine and color printing presses, have announced the acquisition of the Claybourn Corporation, Milwaukee, Wis. The Milwaukee plant will continue in operation under the name of the Claybourn Division, C. B. Cottrell & Sons Co., with the same personnel. Claybourn printing equipment and precision machinery will be manufactured and made available to the trade as in the past. Sales and service offices will be maintained at Westerly, R. I., Milwaukee, New York, and Chicago.

COLOR DATA AVAILABLE

A limited quantity of the Faber Birren color inserts which were used to illustrate his series of articles in *PM*, is still available to mechanical and production executives and can be obtained from Sigmund Ullman Co., Div. of General Printing Ink Corporation. These inserts consist of graphic color spots and combinations of colors and tints, each of which is accompanied by suitable technical data captions to show the use of color in various forms of printing.

LINOTYPE TAMIL

When the first Tamil Linotype was demonstrated in Madras, India, recently, it was accorded a reception fully as enthusiastic as that given some time ago to the first Linotypes to set Devanagari, Gujerati and Bengali.

12 Point Linotype Tamil Light and Bold

கல்லேர் டாதிரியரட் க்துலஅம
ம்பசதவகிந் ப்ச்த்ங்ன்ன குைற

கல்லேர் டாதிரியரட் க்துலஅம
ம்பசதவகிந் ப்ச்த்ங்ன்ன குைற

"Tamil," says C. H. Griffith, vice-president in charge of typographic development with the Mergenthaler Linotype Company and under whose direction these and other Oriental faces were designed and cut, "is the oldest, most cultivated and best known of the Dravidian languages.

Photogravure

By RALPH H. WINSHIP*

Results dependent not alone on copy quality but also on control methods.

AS THE final result of a photogravure job is dependent to a great extent on the quality of the copy furnished and the photographic manipulations during the processing, too much stress cannot be laid on the desirability of uniformity of the negatives and positives. While different types of work may require variations in the density and gradations of the various positives, a standard tonal scale should be adhered to if uniform results are to be expected.

A valuable adjunct in maintaining this uniformity is a densitometer (a photographic density meter), which eliminates the human element and its chances for variations in determining the required tonal range. While the initial cost of such an instrument is quite high, the results obtained through its use will soon justify the expense entailed.

Handling Positives According to Density

In the usual gravure process, a continuous tone negative is made in the camera, retouched, squared, outlined or vignetted, as the case may be. From this negative a reversed positive (*i.e.*, reading reversed) is made by contact, through the camera or by projection. Where several illustrations are to appear on a page and the negatives have been made separately, they may be assembled in position and a composite positive made of the whole, providing they are uniform in quality. However, if a variation in density is apparent, individual positives should be made for later assembly in the form.

When the positives have been made and retouched, they are assembled and mounted in position over a layout of the job, either on plate glass or by fastening with gummed tape to each other or on a semi-translucent paper quite free from stretch or shrinkage.

Benefits of Air Conditioning on Gelatine Base

Type matter may be photographed as line work and stripped in position or, when the type is to be the same size, proofs may be pulled on onion skin or cellophane, dusted with lampblack to secure the desired opacity and used for positives, eliminating two photographic operations. These are fastened in position on the positive form and after a positive paper print or a blue print is made of the completed form for checking and proofreading, it is ready for printing on the carbon tissue.

Gravure, as in all processes using a gelatine base or solution, is very susceptible to variations in humidity and temperature. However, since the advent of air conditioning, rapid strides have been made in controlling these variations with a resulting improvement in standardized results.

Getting Uniform Results from Carbon Tissue

Carbon tissue, a gelatine coated paper, comes in rolls of varying widths and emulsions. The most widely used is one of a reddish color and rather brilliant tone gradation. An emulsion having a longer range of gradations (usually used in color work) is available, as is one of greater printing speed for plants where speed in production is a vital factor. The tissue is sensitized in a solu-

*Beck Engraving Company, Philadelphia, Pa.

(*Continued on Page 38*)

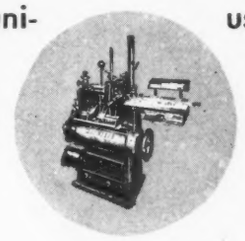
Giant Caster

PRECISION FURNITURE

Precision Furniture may be used as heavy spacing material in the composition of advertisements and type pages; for spacing, in the imposition of forms of all sizes of both cylinder and platen presses; as base for mounting plates of all kinds, and as an efficient, practical, money-saving metal base for the making up of forms with register hooks.

Made in a Variety of Sizes — The 14, 18, 24, 30, 36, 42, 48, 60, and 72 point sizes can be made on the Giant Caster in any length from 1 pica up to whatever measure may be desired.

Absolutely Accurate — Giant Caster Furniture is the most accurate material of its kind available in the printing industry. Height and point size are always uniformly the same within limits of one one-thousandth of an inch.



Any Height Desired — Molds can be supplied for making Monotype Giant Caster Metal Furniture of any standard or special height to meet any cut-mounting requirements.

Made at High Speed — On the 72-point size the Giant makes metal furniture at the rate of 550 square inches per hour — one full newspaper page every 40 minutes. No other machine is so fast.

Low Comparative Cost — Giant Caster Metal Furniture can be made at a small fraction of the cost of steel or aluminum base, and be included in non-distribution.

Stands Up Under Pressure — Giant Caster Metal Furniture stands up under the pressure of the various plating processes used in printing and newspaper plants.

Folder describing the Monotype Single Type System for daily newspapers sent upon request.

LANSTON MONOTYPE MACHINE COMPANY

Monotype Building, Twenty-fourth at Locust Street, Philadelphia, Penna.

Composed in Monotype Twentieth Century Family

Reacts to Surroundings

By ELLSWORTH L. BAILEY*

Human element responds spontaneously when elements provided by science in modern printing plant are utilized

IF WE had never had a moon, a philosopher once said, we would not miss the beauty of its beams; and if we were constantly blessed with the moon's beauty, we would be apt to forget its benefits. Which means in simple speech, I guess, we are prone not to appreciate the good things constantly with us—that we don't miss them until they're gone.

That is not true of the mechanical departments of the Alton *Evening Telegraph* where I work. Conditions are such as to contribute in the highest degree to comfort and health—and that means to efficiency as well. Conditions are more than pleasant. Although they are more constant than even the moon, the men in the mechanical departments are not likely soon to overlook them.

It has been my experience that working conditions conducive to the comfort of the worker increase not only his ability, but his durability, and likewise sharpens his talent. When you're going at top speed to get that last plate on the press while the trucks are waiting, the man who is working in a clean, airy and healthful place will achieve faster performance. Mechanical genius has given us the instrumentalities by which to produce the modern newspaper with amazing speed and efficiency—but, after all, it is the man who must operate those instrumentalities.

In the *Telegraph* building the composing room ceiling is 20 ft. from the floor, with east, south and west exposures (almost solid window space) affording a sweeping view of the Mississippi River as it makes its wider meander from west to east. In full view are the new Federal lock and dam projects.

Two 36 in. fans in the roof provide ample ventilation. The walls are painted buff color, trimmed in a shade a bit darker. Venetian blinds over the windows provide just the proper light.

*Superintendent Press and Stereo Department, Alton (Ill.) *Evening Telegraph*.

The stereotyping and pressrooms also have 20 ft. ceilings finished in aluminum, trimmed in sport red. The stereotype room has south and west exposures, with slatted rollers at the windows. A 36 in. fan in the window above the metal pot draws off fumes and dust.

The pressroom is provided with east and south exposures with roller shades in the windows.

The boiler room, garage, mailing room, and shower rooms are decorated in white.

Lighting and color schemes have been designed to reduce eye strain and windows and fans have been placed to gain maximum ventilation. One result has been that machinery and other equipment is kept in the best possible condition. There are no dust-catching corners.

This is Ellsworth Bailey who corroborates idea that pleasant working environment causes favorable production results.

Below is shown view in Stereotype Department of Alton (Ill.) *Evening Telegraph*.

Science provides machinery that is almost human in its accomplishments. The mind of man has designed amazing mechanical equipment to produce the great American newspaper of today. The careful builder provides the utmost in light, air and comfort for the man who must operate the expensive equipment. The man who can see without squinting, who breathes clean air, who is healthy, is the man best qualified to operate the mechanical equipment that must be run at utmost speed and at maximum efficiency to achieve one of America's greatest institutions—the daily newspaper.

HSP MAKES SOUND MOVIE

A new sound movie was produced recently in the plant of the Harris-Seybold-Potter Company in Cleveland. This new picture shows the interesting details in the manufacture of offset printing presses. For twenty-five minutes this sound movie takes the audience through a modern plant from "castings in the rough" to a showing of the finished product. Features shown in addition to presses are the Harris H.T.B. Stream Feeder, Seybold Cutters and the Traung hydraulic transfer press. The movie is available for a showing in any branch or plant of the Graphic Arts industry.

THE HURRIED PUBLISHER'S BEST FRIEND

●

DURING THE MONTH

OF OCTOBER

AUTOPASTERS

USED BY

THE DAILY MIRROR

LONDON, ENGLAND

spliced automatically

at full speed

537 PAPER ROLLS

out of **537** *handled*

by them

. . . thus turning out

2,885,930 *copies with an efficiency record of*

100%

New York Post has ordered AUTOPASTERS

"THE steadily increasing circulation of our paper, which is now running over 300,000 daily, and its advertising gain of 2,000,000 lines during 1936, have made the installation of Autopasters a necessity."—*New York Post.*

With Autopasters, it is never necessary to replace partly-spent paper rolls with full rolls in order to get the full production of a press during the important early moments of the run. It does not matter what size of rolls are in the reels when the presses start running, for with Autopasters they need never be slowed down for paper replenishment. *With the Autopaster every roll is a full roll.* Partly-used rolls need not be put aside for later use, hence savings of time, energy, and newsprint.

Autopasters may be applied to reels of any make, enabling them to replenish paper automatically at full press speed, however great.

Ask Autopaster users. It will pay you to do so. In addition to giving you greater production the Autopaster will also improve the quality of your printing.

WOOD NEWSPAPER MACHINERY CORPORATION

PLAINFIELD, NEW JERSEY NEW YORK OFFICE: 501 FIFTH AVENUE

LONDON: WITTON-JAMES, LTD.

New Printing Equipment and Supplies

Turbinaire Etching Machines

A new etching machine designed for small newspaper and small country shop use has been announced by the United States Stoneware Company. This new device is known as Turbinaire Etching Machine and is designed to handle plates 11 in. by 14 in.

The machine is of the table model type, is compact in size and is equipped with wash tank and driving motor. Manufacturer states the design is thoroughly modern and all of the latest features are incorporated, such as Flexlock Rubber Couplings, and so on.

Further information may be secured from the manufacturer direct or through *Printing* EQUIPMENT *Engineer*. P-Double-E File No. 2E6.

IPI Announces Holdfast

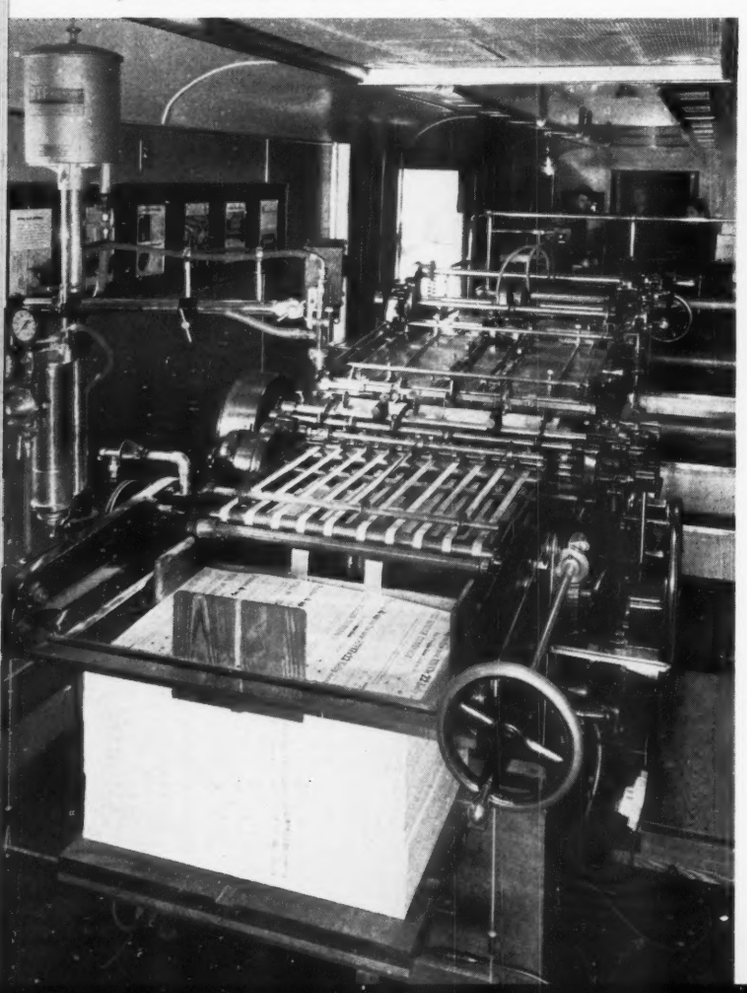
An ink marketed under the trade name "Holdfast" and in which is said to be incorporated new principles of drying and formulation has been announced by The International Printing Ink Corporation. Because of a change in consistency it is claimed this new ink makes possible clean sharp printing and a fast drying schedule. The new ink is intended to be used for publication, catalog, package and carton and tin printing.

Holdfast is a product of IPI Research Laboratories. It should not be confused with Vaporin, however, which dries through vaporization upon the application of heat. Holdfast is formulated with a new and different varnish.

The following claims are made by manufacturer: (1) When applied to a plate, it acts as a plastic film rather than as a series of oil bubbles; because of this consistency, it is licked off the plate very clean. Halftone dots print sharply—there is no "halo" of grease around the dot impression. Three-quarter as well as 90 per cent screens are said to be kept open. The plate does not fill up and the ink dries very quickly. (2) Holdfast can be formulated as a dull black, and it has outstanding non-scratch properties. Sheets can be handled in from 90 to 120 minutes after leaving the press, being sufficiently rubproof in that time to be put through the folding machine. (3) Application of heat will speed up the drying process materially since sheets printed with this new ink can be backed up two hours after the first printing, when heat is applied; without heat, backing-up can be done in five or six hours. Inks become scratch-proof in two or three hours.

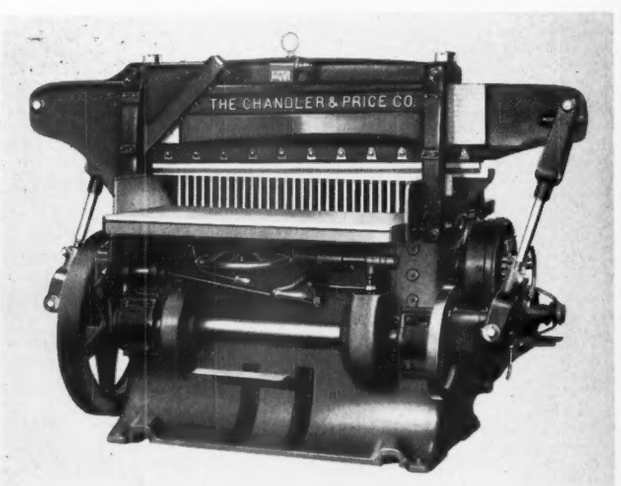
P-Double-E File No. 5W.

Probably the world's most widely traveled printing press, this new A.T.F. 17 in. by 22 in. Kelly operated in 72 cities during the 100-day trip of the A.T.F. "Printers Progress Special." It is said that more than 53,000 printers throughout the country saw it in operation within the special car. Its output during the trip totalled over a million impressions. At a number of the stops, the "pressroom on wheels" was necessarily out of level due to the roadbed on which the train was parked, but the press continued to operate.



C&P Automatic Cutter

The Chandler & Price Automatic Cutter is made in three sizes—39 in., 44 in. and 50 in. capacity respectively. Some of the features of construction are as follows: The solid bed support eliminates vibration during operation of the machine so as to avoid any possibility of the heavily-ribbed cutter table warping or twisting under heavy cuts. The base itself is a one-piece casting. On the 50 in. size the base extends backwardly under the table 21 in. Heavy brackets bolted to the back of this base provide 18 in. of additional table support.



On this series of Chandler & Price cutters the knife is pulled downwardly through the stock. Manufacturer states when a knife is pulled through the stock in the direction of the cut all of the cutter parts are working under tension so as to cause the knife itself to cut smoothly and evenly.

It is claimed the back gauge is always rigid when locked in position and no amount of heavy jogging of stock against it can cause the back gauge to be sprung

UNIFORMITY

of equipment produces uniform results!

ALIKE as two peas in a pod. This short description aptly fits both Ideal Rollers and the presswork which is produced with them.

Day after day, year after year, Ideal Vulcanized Oil Distributors, Ideal Process, Rubber, Synthetic and Graphic Non-Meltable Rollers are producing work consistently uniform. Proper ink distribution and superior performance are rightfully expected of these Ideal products, and they deliver without variation.

There are many inferior printing rollers on the market today, as there have always been—but any old-timer in the game will tell you that it is more economical to use uniform, dependable products for uniform, dependable results.

Is it not logical to give the men in your plant every aid by providing the finest working equipment available? This is why in all sincerity we recommend Ideal typographic rollers.

There is no haphazard guesswork in the manufacture of these products. Scientific instruments and modern machines guide their creation, following true to special formulas for the blending of compositions and synthetics which will best serve certain types of presses and definite classes of work.

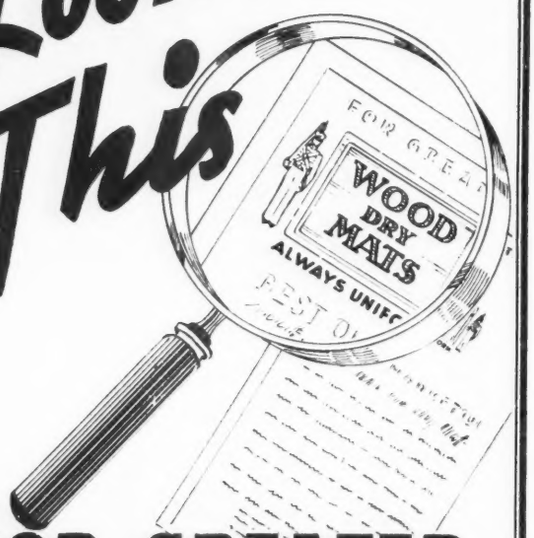
Whatever the specific requirements of *your* plant may be, there is an Ideal Roller made to serve the purpose.

Will you accept the cooperation of a competent representative of this company willing to serve you?

IDEAL ROLLER & MANUFACTURING CO.

CHICAGO — Branch sales offices in all principal cities — NEW YORK

Look into This



FOR GREATER
Dry Mat
SATISFACTION

HAVE you recently examined a Wood Dry Mat under a magnifying glass? Try it some day! You'll be surprised at the depth. Compare it—and you'll know why it's the popular favorite with over 300 stereotype foremen. Yes Sir! Wherever supreme quality, absolute dependability and uniformity are demanded —you'll find Wood Dry Mats!

Always WOOD DRY MATS *Uniform*

WOOD FLONG CORP.
HOOSICK FALLS • NEW YORK

out of square with the knife. A long tongue positioned at right angles underneath the gauge travels in a slot in the cutting table. The back gauge is locked rigidly in any desired position by a sliding wedge lock which pushes the tongue against one side of the slot. Any wear in the wedge or slot is taken up automatically by further tightening of the wedge lock itself.

The overhead 1 in. traveling measuring tape is provided with big figures for easy reading at any angle in dim light.

The cutter starting lever is provided with a lock to prevent accidental starting of the cutter if someone should lean against the lever. The motions for releasing the lock and operating the starting lever have been combined into a simple, one-hand movement.

The back gauge is divided into three parts so it can be set accurately for three separate measures at one time should it be desired to trim three sides of a booklet.

When changing from the trimming of a very heavy stock to a very light stock, provision has been made for changing the amount of squeeze applied to the stock by the binder. This adjustment can be made by a simple adjustment in a friction box located at waist height at one side of the cutter.

Ease of clutch adjustment, adequate lubrication means, hardened rollers and pins, chilled-casting cams and oversize bearings, shafts, gears and structural parts, manufacturer states, have been incorporated in the design and manufacture of this series of paper cutters, besides an automatic safety stop for preventing repeat and other features too numerous to mention in this article.

Further information may be obtained from The Chandler & Price Company direct or through *Printing* EQUIPMENT *Engineer*.

P-Double-E File No. 4F1.

Correction

Unfortunately, the diagram of one of the two Christensen Stream Feeders appeared upside down in the January *Printing* EQUIPMENT *Engineer*. For readers who are not familiar with the design of the feeders we are reprinting the diagrams and captions in correct relation to the descriptive matter.

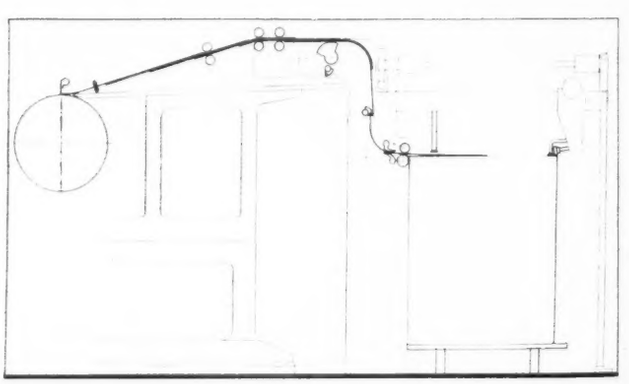


Fig. 1—Diagrammatic side view of one of two new models of Christensen Stream Feeders. This particular model is for use on flat-bed and all presses having high feed-in point. Sheets are fed into gripper bars traveling in a vertical path and are deposited in underlapped relation on a conveyor under the control of driven rolls.

The first of these is a feeder designed for application to flat-bed and all types of presses having high feed-in point as illustrated in Fig. 1. From the vertical path, sheets are deposited in underlapped relation on the new Christensen Feeder Conveyor under the control of driven rolls, and are carried to the front

guides in slow motion (average travel of sheet per cycle or impression being from 8 to 13 in.). Each sheet acts as a hold-down for the sheet following.

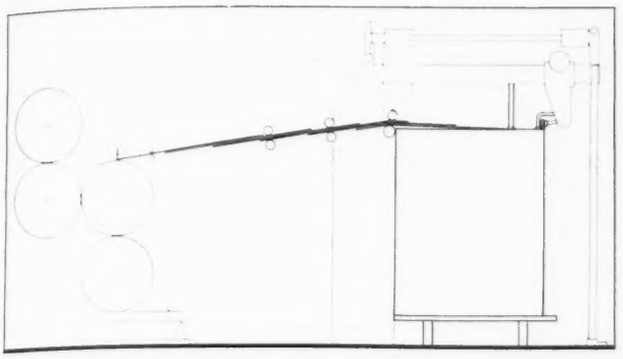


Fig. 2—This feeder, one of two which have been announced by the Christensen Machine Company, is designed for application to offset and low-feed-in point machines.

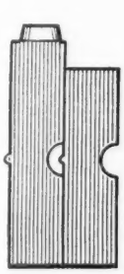
The second type feeder is designed for application to offset and low-feed-in point machines. The machine underlaps sheets directly off the pile. All separation and forwarding is handled from the rear of the feeder pile by specially designed separators and sheet forwarders. Sheets leave the pile in underlapped relation. The design of this machine embodies the same features as those of the first type shown in Fig. 1 except that the vertical travel of sheet is eliminated.

Interlocking Type Announced

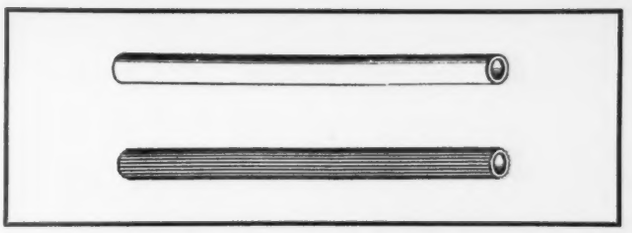
Workups, when printing from Monotype or other moveable type forms is said to be eliminated by a new Interlocking Non-Work-Up Principle now being marketed by the Interlocking Type Company. The claim is made that type cast and pages made up embodying the Non-Work-Up Principle are as solid as any electroplate and that it is impossible for any single space, quad, lead or slug to rise up to the printing surface.

The rib as applied to Monotype mold in the composition sizes, is achieved by a simple alteration to existing molds which results in casting type with a very fine rib on the back edge of each character, space and quad. These ribs are placed at the same height as the regular type nick so that the ribs at the back of one line mesh with the nicks on the front edge of the preceding line. Likewise, leads and slugs are cast with a groove to mesh with the ribbed type. The Monotype display sizes and all other type fonts for hand composition remain as is, without alteration, except that for these fonts only the spaces and quads are cast with the Interlocking rib.

P-Double-E File No. 1G.



This diagram shows scheme for casting rib on constant side of type body. The rib is exactly opposite the conventional nick on the opposite side of the type body. The rib in conjunction with the nick prevents workup of type while being printed on the press.



KEYBOARD RUBBER ROLLS

To Perform Their Function

Must be Resilient— Must be Tough!

RESILIENT—So that the teeth of the keyboard cams will not be dulled; so that the surface of the roller will "give" on impact of the cam; so that they will STAY soft.

TOUGH—So that they will wear for a long, long time.

Our oversize non-blooming rubber rolls are so pliable that they can be "bunched" in one hand, almost. The softest rubber roll you ever saw. Thousands of them in service over a period of years has brought many comments on their durability.

We know that once you have tried our rolls you will be sold for good.

TRADE ★ MARK

CAN YOU BEAT THIS?

"Just a word concerning the 'Ace' assembler driving belts used on our Intertypes.

"We purchased one for each machine about five years ago and our machinist tells us that they seem to be good for a long time yet. The machines run six days a week and we can truthfully say that driving belt troubles are over with an 'Ace' belt on the machine.

"The Sheldon Mail (Iowa)
"By K. L. Woods."

The above speaks for itself. Ace belts are also made for every other part of Linotype and Intertype machines.

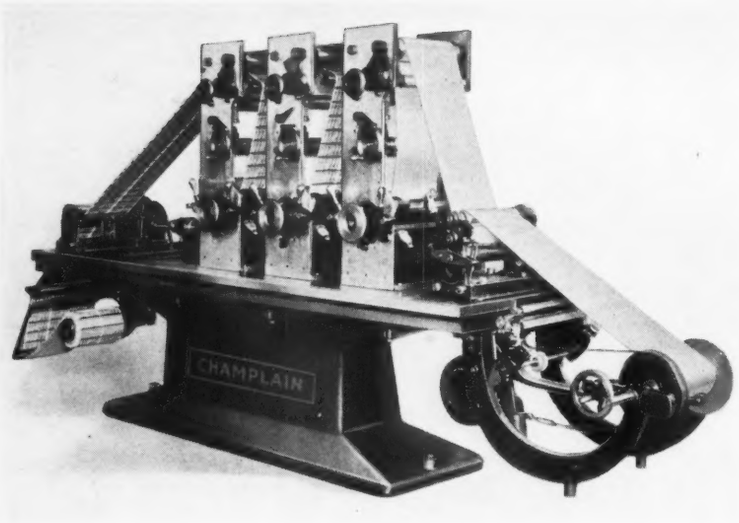
Use Star Replacement Parts
Assured Accuracy—Finish and Quality

LINOTYPE PARTS CORPORATION

NEW YORK
203 Lafayette St.

KANSAS CITY
314 West 10th St.

CHICAGO—318 West Randolph Street
LOS ANGELES—1133 Maple Ave.



At left is shown the Chambon Corporation's new rotary gravure printing press.

All printing units are placed in straight-line formation on the bed of the press, which may also be equipped with fabricating units for finishing the printed piece immediately following the printing. Due to the type of inks used and the method of application, drying takes place rapidly. Color units may be registered while the press is running. Manufacturer states a method of making the gravure plates has been developed. Plate changes can be made in ten minutes per color. Champlain presses are made in sizes from 8 in. to 40 in. wide, to print any number of colors required, and to fabricate the printed piece complete and deliver it ready for use in subsequent packaging operations.

P-Double-E File No. 2B13.

Champlain Rotary Gravure Press

A new rotary gravure printing press which will print on all types of paper, at high speeds, has been introduced by Chambon Corporation. The Champlain Rotary Gravure Press will print on cellophane, foil, coated stock, cardboard, and various stocks used for package printing.

The method of printing brings out the tone formation by means of depth of ink deposited, to assure naturalness of reproduction. High gloss finishes, it is claimed, can be obtained without the use of lacquers or varnishes. Metallic inks are applied so as to obtain a bright impression and a more permanent luster.

Presses by Duplex

The Duplex Printing Press Company has announced the installation of a new Model E high-speed flat-bed web perfecting press in the plant of the Pennsylvania Slovak & Greek Catholic Union, Wilkes-Barre, Pa. A new Duplex Model A flat-bed web perfecting press has been installed in the plant of the Memorial Press, Inc., Plymouth, Mass.

Announcement has been made of the recent shipment of a new eight-page Duplex Unitubular press with half-page folder to the Telephone Company, Rio de Janeiro, Brazil. Duplex tubular stereotype equipment was shipped with this press.

EDES PHOTO-ENGRAVING

EDES SUPERFINE QUALITY ZINC

ZINC

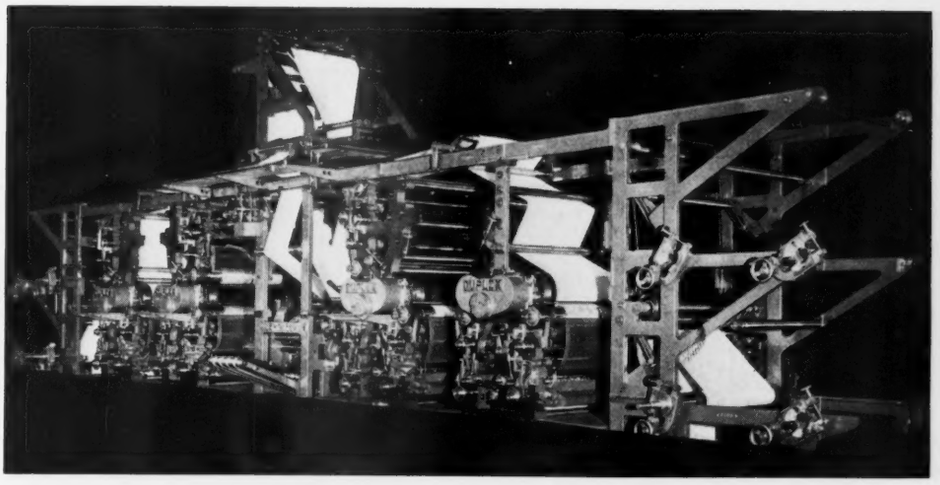
THE STANDARD FOR MORE THAN 80 YEARS

UNIFORMLY CONTROLLED BY MODERN SCIENTIFIC EQUIPMENT

THE EDES MANUFACTURING CO., PLYMOUTH, MASS.

Stocks Carried by the Following Representatives

John H. Heimbuecher Metals Co., 514 No. Third St., St. Louis, Mo.
Gazzolo Drug and Chemical Co., 119 So. Green St., Chicago, Ill.
E. H. Walker Supply Co., Printcraft Bldg., Washington, D. C.
Selby Mohr, 883 Mission St., San Francisco, Cal.
C. S. Illingworth, 49 Springville Avenue, Buffalo, New York
Thompson-Hayward Chemical Co., 2228 Blake St., Denver, Colo.
Thompson-Hayward Chemical Co., 909 2nd St. So., Minneapolis, Minn.
Metzger Photo Supply Co., 1091 So. Main St., Akron, Ohio
G. C. Dom Supply Co., 125 East Pearl St., Cincinnati, Ohio



The Buyers Guide, Inc., Seattle, Wash., has installed this 16-page Duplex Unitubular Printing Press. Press equipment includes Duplex high-speed half-page folder complete with Duplex quick-fold centering device, three single-color cylinders in double frames for the future addition of color cylinders, removable pan ink fountains. Four of the units are double reversible to accommodate special leads. Color registering mechanisms on all plate cylinders, electric paper roll hoists and a balloon former have been provided. This is said to be the first time a balloon former has been applied to a Unitubular press. The press will be operated by a 75 h.p. full automatic drive.

Twinned 12-page Duplex Unitubular presses were installed recently in the plant of Rodgers & McDonald Publishers, Inc., Los Angeles, Calif.

A four-page Duplex Unitubular press with double color unit and two half-page folders was installed recently in the plant of Roy E. Shadle, Los Angeles, Calif. Included in the equipment is a set of Duplex stereotype plate-making equipment.

"Thermo-Tector" For Fractional HP Motors

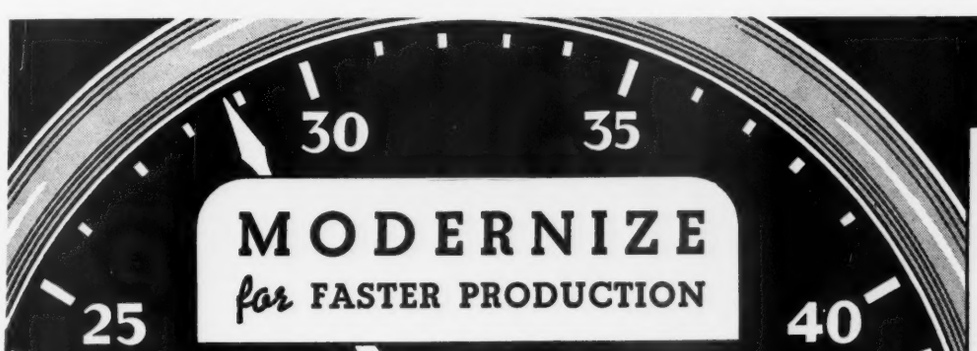
A new thermal overload switch for fractional horsepower motors, operating on line current and arranged for convenient mounting on the conduit or terminal box of the motor, has been placed on the market recently by the General Electric Company. It is completely self-contained and has no links or plugs to be replaced.

Known as the "thermo-tector," the device automatically disconnects the motor from the line, when an overload occurs, before the motor reaches a dangerous temperature. Then, when the motor has cooled, it is automatically reconnected to the line, the entire operation being repeated at a safe interval until the motor is freed of overload or is removed from the line.

Where the automatic-reset feature is not required, a form of the new switch is available which can be used to disconnect the motor from the line and leave it disconnected until the device is manually reset.

The elements of the switch consist of a thermostatic bimetallic helix, a heater helix, a flat steel spring, and a contact arm. The bimetallic helix is fixed at one end. The opposite end carries a slotted arm which rotates

(*Continued on Page 36*)



. . . with trouble-free MORRILL INKS

FASTER production means more jobs handled and greater profits. Faster production helps you hold customers and get new business. And, to a large degree, that faster production depends on *ink*. ★★★ Rapid-setting Morrill Inks permit faster production with less danger of offset, allow earlier and faster folding—and greatly reduce smudge and rubbing often caused by hurried handling. Morrill Inks mean clear, sharp halftones; crisp, legible text matter; and dependable performance. Learn how Morrill can help you increase production—'phone, wire or write the nearest Morrill branch for full details. No obligation.

Chromium Black

Scratch-resisting, halftone black. Dries hard in half the usual time—does *not* dry during makeready. Survives handling with less risk of marking.

DULLSET INKS

Produce soft, rich tones on rough paper without sacrifice of depth and clarity. The finest ink known for use with rubber plates. Ideal for high-class direct-mail advertising.

Clipper Blue

Quickly changed from deep, rich blue to light tints by simple mixing. Provides larger range of fresh, clean-printing shades.

Inks BY **MORRILL**

GEO. H. MORRILL CO.

Division GENERAL PRINTING INK CORP. • 100 SIXTH AVENUE, NEW YORK, N. Y.

FACTORIES • Norwood, Mass. • Tacony, Phila., Pa. • Chicago, Ill. • San Francisco, Calif.
BRANCHES • Boston • New York • Philadelphia • Detroit • Chicago • St. Louis Minneapolis • Fort Worth • Los Angeles • San Francisco • Seattle

Modernize in '37 with Morrill Inks

The engraver gets a break...

Consider these big Advantages

1 DEPENDABLE UNIFORMITY DUE TO ELECTRIC INDUCTION PROCESS.

2 QUICK CLEAN ETCHING DUE TO PERFECTED FORMULA.

3 ABILITY TO STAND UP UNDER PRESSURE.

4 EASILY OBTAINABLE — QUICK DELIVERY.

5 ALWAYS TRUE TO GAUGE.

...with these MODERN METALS

IT BURNS up an expert engraver to have a cut go sour through no fault of his own. Give the men in your shop a "good break" —specify metals of proved uniformity— Zomo Electric Zinc and A-Z Alloy.

These metals are made according to closely controlled formulas. They are melted and cast in the electric induction furnace for perfect blending. They etch clean and use less acid.

Today, more Zomo Electric Zinc goes into the bath than any other metal. Use it for all regular work, and use A-Z Alloy for long direct press runs and heavy mat work.

Leading metal distributors in the United States, Canada and England carry stocks of these metals.

ZOMC ELECTRIC ZINC

A-Z ELECTRIC ALLOY

THESE TRADE MARKS IDENTIFY EVERY SHEET

Patents

DECEMBER-JANUARY

Some Semagraph patents relating to copy preparation have been allowed.

Composing Machines:

2,065,155. TYPE ARRANGEMENT FOR COMPOSING MACHINES. Samu-El Ish-Shalom and Otto I. Bloom, New York, N. Y., assignors to Mergenthaler Linotype Company, a corporation of New York. Application December 10, 1935, Serial No. 53,695. 6 Claims. (Cl. 199—18.)

1. In a typographical composing machine having a type arrangement comprising a group of meaningless letter elements which when aligned on a line-composing or single-type casting machine in group assembly of two or three form a complete character, a typographical arrangement comprising keys having keyboard indicators each showing a complete character but having the letter element which is controlled by that key represented in a manner easily distinguishable from the complemental element or elements making up the complete character.

2,065,156. PRINTING FORM. Fillison L. Speiden, Atlanta, Ga., assignor to Mergenthaler Linotype Company, a corporation of New York. Application September 21, 1934, Serial No. 744,889. 16 Claims. (Cl. 199—66.)

1. A type bar or slug formed with an elongated rule printing element formed with rounded ends and extending transversely of the slug body and terminating short of at least one side face of the slug.

2,065,159. SLUG CASTING MACHINE. Anthony J. Stouges, Queens Village, N. Y., assignor to Mergenthaler Linotype Company, a corporation of New York. Application June 17, 1935, Serial No. 26,911. 19 Claims. (Cl. 199—47.)

1. In a slug casting machine, the combination of a metal pot, a pump for forcibly injecting molten metal from the metal pot into a mold, means for operating the pump, means for conditioning the pump to vary its operative effect in injecting the metal into the mold, and means controlled by a change of mold size for automatically conditioning the pump to correspond.

2,065,274. KEYBOARD UNIT FOR LINE CASTING MACHINES. Andrew Good, Glendora, Calif., assignor, by mesne assignments, to Mergenthaler Linotype Company a corporation of New York. Application September 24, 1934, Serial No. 745,177. 18 Claims. (Cl. 199—18.)

1. In a device for operating a slug-composing typesetting machine, provided with a main matrix magazine and an auxiliary matrix magazine, said device having a plurality of keys arranged according to the arrangement of keys in a standard typewriter keyboard, and means controlled by the keys for selectively releasing matrices from either of the magazines.

2,067,182. MEANS FOR AUTOMATICALLY SETTING TYPE IN TYPESETTING MACHINES. Buford L. Green, Charlotte, N. C., assignor to Semagraph Company Dover, Del., a corporation of Delaware. Application November 2, 1929, Serial No. 404,331. Renewed July 20, 1933. 285 Claims. (Cl. 199—18.)

1. Means associated with a typesetting machine to automatically set the type therein which comprises photo-electric cell mechanism adapted to be operated by code characters on a sheet of translucent material, the photo-electric cell being adapted to read the code characters on the sheet of material to energize a magnet associated with a particular key bar to cause the key bar to release a certain matrix from the magazine of a typesetting machine into the assembly mechanism of the typesetting machine, and code characters on the sheet for operating the typesetting machine to further expand the space bars in the line.

2,067,183. MEANS FOR PREPARING CONTROL SHEETS. Buford L. Green, Charlotte, N. C., assignor to Semagraph Company, Dover, Del., a corporation of Delaware. Application February 7, 1930, Serial No. 426,854. Renewed April 15, 1936. 81 Claims. (Cl. 197—1.)

40. Means for preparing a control sheet for use in typesetting, typecasting and like machines, comprising a typewriting mechanism provided with type bars and a carriage mechanism for receiving a sheet of paper, means on the type bars for printing code indicia, means for measuring and indicating at any given time the amount of space in a line occupied by code indicia for both legible characters and spaces, means for indicating the expansibility of a line and means for indicating the space members which may be added to the line.

69. A typewriter having individual type bars some of which are provided with a raised portion for writing a character and having also immediately beneath the character portion one or more projections for writing one or more dots forming a code representation of such character.

2,067,184. AUTOMATIC MEANS FOR SETTING TYPE AND THE LIKE. Buford L. Green, Charlotte, N. C., assignor to Semagraph Company, Dover, Del., a corporation of Delaware. Application February 20, 1931, Serial No. 517,171. 113 Claims. (Cl. 119—18.)

1. Means for reproducing printed characters comprising a mechanism adapted to receive a control sheet, a plurality of imperforate code characters on the sheet, there being one code for each character to be reproduced, some of the code characters comprising a plurality of cell controls, a machine for reproducing printed characters, means in the mechanism for receiving the control sheet, a light sensitive cell, means for moving the control sheet with relation to the light sensitive cell to cause the cell controls in each code character to be successively scanned by the light sensitive cell, and means operable by the scanning operation for automatically reproducing the character represented by the code character scanned by the scanning mechanism.

2,067,185. MEANS FOR PREPARING CONTROL SHEETS FOR LINOTYPE MACHINES AND THE LIKE. Buford L. Green, Charlotte, N. C., assignor to Semagraph Company, Dover, Del., a corporation of Delaware. Application June 23, 1931, Serial No. 546,380. Renewed January 16, 1936. 60 Claims. (Cl. 197—1.)

1. In a typewriter having type bars and a platen and a ribbon, projections on the type bars for printing cell controls, means operable by the type bars for measuring the space occupied in regular line printing by a character represented by each of the cell controls, the measuring means comprising a bar for each key bar and operable by the key bar when depressed in a line transversely of the platen of the typewriter, a plurality of bars slidable longitudinally with relation to the platen of the typewriter, indicating means controlled by the longitudinally movable bars for indicating the space occupied by a particular character in regular line printing.

Patent Papers:

Printed copies of patents are furnished by the United States Patent Office at 10 cents each. Address the Commissioner of Patents, Washington, D.C., and enclose 10 cents for each patent paper wanted.

2,067,186. SELECTING MECHANISM. Buford L. Green, Charlotte, N. C., assignor to Semagraph Company, Dover, Del., a corporation of Delaware. Application September 9, 1933, Serial No. 688,753. Renewed July 29, 1936. 78 Claims. (Cl. 199—18.)

1. A selecting mechanism controlled by a plurality of electrical impulses for selectively operating a plurality of work-performing means comprising a first selector, a second selector controlled by the first selector, a third selector controlled by the second selector, and a fourth selector controlled by the second selector for selecting the portions of the third selector to be operated.

Printing Presses:

2,061,033. SHEET TRANSFER MECHANISM FOR PRINTING PRESSES. Alexander T. Koppe, New York, N. Y. Application November 29, 1933, Serial No. 700,258. 51 Claims. (Cl. 271—53.)

1. The combination in mechanism of the class described, of a cylinder adapted to carry a sheet of paper, paper positioning means having a normally stationary position, means for delivering a sheet of paper to the stationary positioning means, and angularly movable pneumatic means positively gripping the sheet for feeding the sheet to the cylinder after it has been positioned.

2,061,325. INKING MECHANISM FOR PRINTING PRESSES. Robert Miehle, Chicago, Ill., Mabel K. Miehle administratrix of said Robert Miehle, deceased. Application February 19, 1932, Serial No. 593,972. 26 Claims. (Cl. 101—345.)

1. In a reciprocating bed and cylinder printing press the combination with a plurality of form inking rollers at one side of the cylinder, of supporting means for the rollers adapted to permit movement of a portion of the rollers adjacent the cylinder into and out of form contacting position independently of the remainder of the rollers, and means operated in timed relation with reciprocation of the bed for actuating the portion into and out of form contacting position and adapted to contact the portion with only the trailing portion of a form on the bed during the stroke of the bed in the direction from the cylinder toward the form rollers, the portion contacting a portion of the form not contacted by the remainder and also overlapping therewith in its contact with the form.

2,062,152. PRINTING PRESS. Nelson S. Welk, Athens, Ohio, assignor to The McBee Company, Athens, Ohio, a corporation of Ohio. Application January 24, 1935, Serial No. 3,201. 5 Claims. (Cl. 101—295.)

1. In a printing press, a vertical standard, a platen vertically adjustable thereon, a heated type bed, an inking mechanism comprising an ink fountain, an ink fountain roller, a ductor roller, vbrating and distributing rollers, a rotating ink cylinder, form rollers which contact the ink cylinder, means to positively drive all of the rollers, means to reciprocate the form rollers across the type bed, the means comprising a pair of horizontal guides on which the form rollers are slidable, a sprocket at each end, a chain on the sprockets, the form rollers being secured to the chain whereby its movement will move the form rollers.

2,063,636. METHOD OF AND MEANS FOR DAMPENING PRINTING PLATES. Burt D. Stevens, Evanston, and Benjamin L. Sites, Chicago, Ill., assignors to The Miehle Printing Press & Manufacturing Company, Chicago, Ill., a corporation of Illinois. Application February 24, 1932, Serial No. 594,954. 24 Claims. (Cl. 101—147.)

1. In a system for dampening printing plates by condensation, the combination with a printing plate support, of means for supplying a cooling medium thereto for the purpose of reducing the temperature of the support below the dew point of the air surrounding the support, means for controlling the temperature of the support by automatically varying the volume of cooling medium supplied to the support depending on the temperature of the cooling medium returning from the support, and means for supplying air in a desired condition to the printing surface on the support for producing a film of moisture thereon of desired character.

2,064,168. PRINTING PRESS. Christian R. Kaddeland, Shelton, Conn., assignor to Harris-Seybold-Potter Company, Cleveland, Ohio, a corporation of Delaware. Application May 20, 1933, Serial No. 671,992. 24 Claims. (Cl. 101—157.)

1. In a printing press, a rotary cylinder having axially extending journal bearings at either end removably mounted in oppositely disposed press frames, the frames having complementary outwardly bulging portions in alinement with the journal bearings to provide a passage of greater width than the axial length of the cylinder and bearings, the cylinder and its extended journal bearings being as a unit transversely installable in, or removable from, the press through the passage at right angles to the axis of the cylinder at both sides of the press.

2,064,622. PRINTING PRESS. Robert Miehle, Chicago, Ill.; Mabel K. Miehle, administratrix of said Robert Miehle, deceased. Application April 6, 1931, Serial No. 528,048. 36 Claims. (Cl. 74—27.)

1. In a device, the combination with a horizontally reciprocable member provided with a downwardly facing longitudinally extending rack, of two revoluble meshed gears disposed underneath the reciprocable member on vertically spaced axes and the upper of which is operatively connected directly with the rack, a revoluble internal gear segment alternately engaging the gears for operating the reciprocable member through the medial portions of its movements, and means for reversing the reciprocable member at the ends of its movements including a crank operatively connected with the gear segment.

2,064,780. PRINTER'S BLANKET. William C. Calvert, Cuyahoga Falls, Ohio, assignor to Wingfoot Corporation, Wilmington, Del., a corporation of Delaware. Application August 18, 1933, Serial No. 685,723. 10 Claims. (Cl. 154—54.5.)

1. A printer's blanket which comprises a layer of rubber and a flexible coating of a stabilized rubber hydrohalide to protect the rubber.

2,065,002. STEREOTYPE PLATE CLAMPING MEANS. Henry A. Wise Wood, New York, N. Y., assignor to Wood Newspaper Machinery Corporation, New York, N. Y., a corporation of Virginia. Application December 21, 1932, Serial No. 648,176. Renewed February 6, 1935. 4 Claims. (Cl. 101—378.)

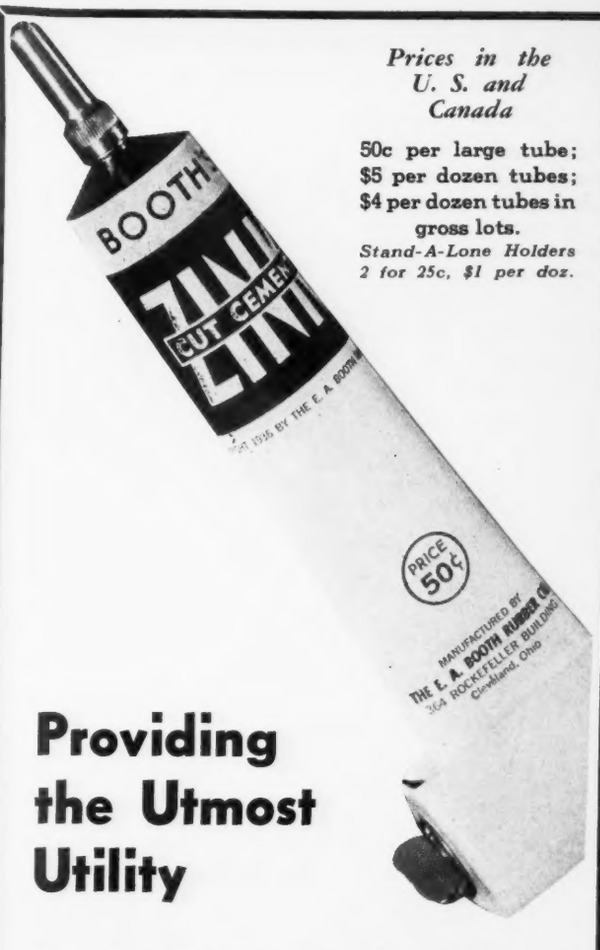
1. In a device for clamping a printing plate on a printing cylinder, the combination of a longitudinally movable end clamp for engaging the outer edge of the plate to clamp it, yielding means for normally holding the end clamp in clamping position, means for clamping the plate on its under side between the edges, and yielding means for operating the clamping means to assist in holding the plate.

2,065,279. INK FEEDER FOR PRINTING PRESSES, ETC. William Kline, Roanoke, Va. Application July 7, 1934, Serial No. 734,162. 8 Claims. (Cl. 101—347.)

1. Ink supplying means for a printing press having inking means comprising an ink holder with a discharge outlet to the press-inking means, and means to subject ink in the holder to air pressure to expel ink from the discharge outlet including an air pressure producing device with a movable air pressure producing member and an operative connection between the member and a moving member of the press.

2,065,749. PLATEN JOB PRESS OF THE REVOLVING DISK TYPE. George A. Rutkoskie, Athens, Ohio, assignor to The McBee Company, Athens, Ohio, a corporation of Ohio. Application December 16, 1933, Serial No. 702,679. 4 Claims. (Cl. 101—293.)

1. The combination with a printing press having a bed and movable platen with inking means including a revolving inking disk and form roller, adapted to be moved across and in contact with the bed and disk, of a heated ink fountain, fountain roller and vibrator roller in the inking means, electrical heating elements in the inking disk, stationary contacts carried by the press and engaging the disk to supply electrical current to the same during rotation, and means for heating the bed.



Prices in the U. S. and Canada

50c per large tube; $5 per dozen tubes; $4 per dozen tubes in gross lots.

Stand-A-Lone Holders 2 for 25c, $1 per doz.

Providing the Utmost Utility

Booth's Zink Cut Cement is packed in collapsible tube form to prevent loss of cement by hardening through exposure to the air. The long nozzle is supplied so the cement can be applied in any quantity at the exact place desired on the back of the cut. The Stand-A-Lone Holder forms a base for supporting the tube in upright position to prevent the cement oozing from the nozzle when not in use. The key in the holder base winds the tube as the cement is used and extracts all cement from the lower part of the tube.

This method of packaging the Cement in tubes assures maximum utility without waste or loss of time. No muss—no fuss; no sticky pots or jars.

BOOTH'S GREEN RUBBER KEYBOARD ROLLS

and properly maintained keyboard cams form a happy combination for the operator. Crepe finish or Corrugated Tread —as you choose. $1.30 per pair. $7 per dozen. 55c each in lots of 100.

The E. A. **BOOTH** Rubber Co.

364 Rockefeller Bldg. Cleveland, Ohio

HERE'S ANOTHER JOB··THAT'S WANTED YESTERDAY

Every printer knows the grief of rush jobs. The customer wants delivery before the order is received and often lacks appreciation of the amount of work that even the simplest job requires. You can't afford to slight rush work—you want to make delivery as soon as possible —you need every "break" you can get.

Freedom from metal trouble is one "break" that every printer can count on if he uses Imperial type metal. Then he knows that the metal, at least, will not necessitate resetting on the machine nor hand-work replacing defective composition.

For rush work you need solid bodies and perfect faces. That can only be obtained with a metal that is always in balance, always in perfect condition —in other words,

Imperial

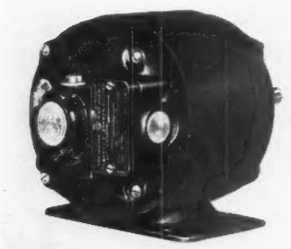
IMPERIAL TYPE METAL COMPANY

PHILADELPHIA • NEW YORK • LOS ANGELES • CHICAGO

New Equipment

(*Continued from Page 33*)

about one support of the spring. A low-resistance heater, which is connected in series with the motor winding and which carries the motor current, completely surrounds the bimetallic helix. This heater element is welded in place and is tamperproof. The flat steel spring is mounted between two rigid supports in such manner that it is slightly bowed. This bowed spring carries a contact arm which makes contact when the spring is



"Thermo-Tector," a new thermal overload switch for fractional horsepower motors.

bowed in one direction, but which opens the circuit when it is bowed in the other direction.

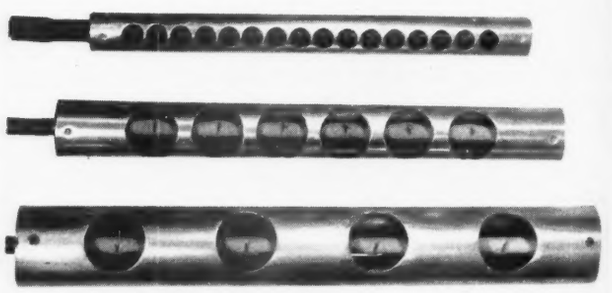
When the bimetallic helix is heated to a temperature above normal, the free end rotates and reverses the bow of the spring. When the spring passes dead center, it also moves the contact arm and disconnects the motor from the line. With the line open, current ceases to flow in the heater helix, the bimetallic helix turns in the opposite direction, and when the temperature is again normal, the spring snaps to the "on" position.

The Thermo-Tector is available in ratings for a.c. fractional-horsepower motors having rated full-load currents from 1.3 to 10.4 amp.

P-Double-E File No. 5CC.

Midget Metal-Encased Static Bar

A line of metal-encased Static Bars has been developed recently by the Simco Corporation. The bars vary in outside diameter from ¼ in. to 1¼ in. It is claimed



View of several sizes of metal-encased static bars recently announced by Simco Corporation.

these bars are capable of discharging highly charged materials at production speeds.

A series of holes is drilled in the brass outer casing, the diameter and spacing of the holes varying with each size of bar. This brass casing houses a complete static bar which is suitably insulated from it. Each point of

the static bar is positioned in the center of a hole in the casing below the level of its inner wall.

Manufacturer states these metal-encased bars work on a new principle which makes it possible to ger a bar efficiency equal to that of a bar with exposed points and are so designed that there is no suppressing action by the outer grounded casing. On the contrary, a magnifying effect is produced.

The metal encased bars can be installed at any point in a given machine as no clearance is required and will operate efficiently as long as the holes in the bar point towards the material to be discharged.

P-Double-E File No. 5V.

ALLEN CONDUCTS CLINIC

John E. Allen, editor of The Linotype News, conducted a newspaper clinic at the meeting of the Virginia Press Association in Fredericksburg, Va., January 21 to 23. Announcement of the winners of the Rhame certificates of award in the association's latest better newspaper contests was made. The donor of the certificates is C. C. Rhame, manager of the New York Agency of the Mergenthaler Linotype Company.

On the jury of judges for the contests this year are Laurance B. Siegfried, editor of the *American Printer;* Ernest F. Trotter, managing editor of *Printing*, and A. H. Burns, Mechanical Superintendent of the New York *Herald Tribune*.

In the classification for dailies published in cities of less than 25,000 population, the certificates went to: The Winchester *Evening Star* for best front page. The Danville *Bee* for best general makeup. The Fredericksburg *Free Lance-Star* (a double award) for the best advertising display and the best presswork.

In the classification for dailies published in cities of more than 25,000 population, the C. C. Rhame awards went to: The Richmond *Times-Dispatch* for the best front page. The Richmond *News-Leader* for the best advertising display. The Roanoke *World-News* (double award) for the best general makeup and the best presswork.

ROBERTS INK PORTFOLIO

Lewis Roberts, Inc., Newark, N. J., manufacturer of printing inks, is sponsoring a 76-page and cover portfolio showing sample printings of the various kinds and colors of inks made by this firm. It is stated by President John Ellison that in addition to serving as a catalog, the publisher has endeavored to make it a text book for the printer, artist and advertiser.

By an arrangement which permits swiveling the pages, it is possible to visualize innumerable color combinations. Each page is died-out in four places through solid blocks of color. By superimposing the color blocks one over the other the masking of surfaces for accurate comparison of any two colors is possible.

It is stated by the manufacturer that the improvements made in printing inks during the last few years make it possible for the printer to secure brilliant color with excellent resistance to light and the chemicals with which it might come in contact.

The catalog is being distributed by Lewis Roberts representatives through the company's branches and by direct mail upon request.

BENNETT TO TALK

Paul A. Bennett of the Mergenthaler Linotype Company will address the Boston Club of Printing House Craftsmen Monday evening, February 8, on a "Decade of Fine Book Printing in New England." At the meeting, which will be held at the Kenmore Hotel, Boston, the 161 books from New England printing firms that have made the "Fifty Books" shows of the American Institute of Graphic Arts in the last ten years will be on display.

LIGHTING MANUAL

New 36-page handbook entitled "A Manual of Factory Lighting Practice," is designed to provide the plant operating executive with a treatise covering the commonly encountered problems of factory lighting and solution. Thirty common lighting problems found in the various operations and locations of the average plant are discussed. The manual gives recommendations, installation diagrams and equipment specifications. Written in plain, non-technical language and profusely illustrated. Written for the executive who wants detailed instructions on how to "tailor" his lighting to the seeing needs of each individual operation in his plant. Free to plant executives who request it. Address the Benjamin Electric Mfg. Company, Des Plaines, Illinois.

BURGESS CHROME MATS

The Mat Service Manager Says...

They are tough and stand mailing and rough handling....

BURGESS CHROME MATS

CHROME MATS A LABORATORY PRODUCT MADE IN U.S.A.

BURGESS CELLULOSE COMPANY

FREEPORT - ILLINOIS

2

Pacific Coast Representative, RALPH LEBER, 426 Polson Bldg., Seattle, Washington

A 280

BURGESS CHROME MATS

MORLEY

better

MATS

- **Speedier on "form"**
- **Winners on performance**

Why not give them a thorough trial in your own plant?

Samples Free for the Asking

MORLEY BUTTON
Manufacturing Company
PORTSMOUTH, NEW HAMPSHIRE
New York Office, 46 East 11th Street

Photogravure

(Continued from Page 24)

tion of potassium bichromate and water, the usual strength being about two and one-half per cent. By varying the percentage of bichromate the resulting resist can be varied in contrast, as a weaker solution increases the contrast, while a stronger solution will give a softer and heavier resist. After sensitizing, the tissue is squeegeed on ferrotype plates and dried. This usually takes from one and one-half to two hours.

As the printing speed of the carbon tissue is dependent to a great extent upon the moisture content of the tissue during the exposure, control of this moisture content by uniform drying and during later handling of the tissue before printing becomes imperative if uniform results are to be expected. Here air conditioning plays an important part, by permitting the tissue to be dried at a uniform rate regardless of weather conditions and by maintaining a suitable moisture content in the tissue thereafter. While the tissue may be used immediately after drying, or may be kept for a week or more after being sensitized before printing, it is usually used within a day or two.

The Hazards of Copy Screens

When the gravure form has been assembled and OK'd, the carbon tissue is screened by placing it in contact with a gravure screen in a vacuum frame and exposed to a powerful arc lamp. The gravure screen is a white line screen, *i.e.*, the dots or squares are opaque and the lines

The Only Matrix Scorcher

—That guarantees absolutely uniform temperature on every square inch of the drying area.

—That applies heat by contact rather than by absorption through heating chambers.

—That has a self-conforming curtain cover, insuring even pressure on the entire mat.

—That has self-adjusting tension on the cover.

—That is equipped with automatic timer.

—That can be had with either a single balanced heat or with a thousand heat selective control.

—That may be had on 30-day free trial without obligation.

Model "MMM" with Direct Surface Heat

The "MAT-A-MINUTE" FORM-O-SCORCH
—Write for Details—

AMERICAN PUBLISHERS SUPPLY
BOX 131—WEST LYNN, MASS.

transparent. The usual ruling is 150 lines per inch, although several firms use 175 lines per inch and some even finer. For plants where initial cost is an item and space at a premium, a copy screen (a photographic positive from a master negative screen), may be used with very satisfactory results. However, the continued exposure to the arc light along with continued handling darkens the transparent lines and sometimes bleaches the opaque dots, causing many a headache in the etching room. The etched glass screen, being cleanable and having a sharper clean cut line and perfectly opaque dots, is well worth the additional investment. It should be fastened in its own printing frame, however, and removed only for cleaning, as the breakage risk, due to its large size, would be too great if handled daily.

Hardening of Gelatine by Light

After exposure to the screen, the tissue is placed in position on the positive form in the vacuum frame and another exposure made to the arc light. As the light reaches the tissue through the positives it hardens and renders the gelatine insoluble in proportion to the exposure received through the varying densities of the form. Where the tissue has received considerable exposure, as in a light portion of a picture, the gelatine will be hardened for a considerable depth, while a portion that received very little light, as in the shadows, will be hardened very slightly, and so on throughout the entire tonal range of the positives.

Upon completion of the exposure, the tissue is placed in position on the plate or cylinder and made to adhere by moistening and squeegeeing, either by rollers or by hand. The plate or cylinder is then placed in hot water at about 110 deg. temperature. After a short immersion, the paper backing is removable and upon further immersion, the gelatine, unaffected by the exposure to the arc light, dissolves away, leaving a relief image of the positive form criss-crossed with a myriad of screen lines from the first exposure. The shadows and dark portions of the form having permitted very little light to pass through to the tissue, are represented by a thin covering of gelatine, while the highlights and light portions are quite heavy by comparison. When thoroughly developed, the resist is dried by applying a solution of alcohol and water and then fanned. The parts not to be etched are then painted over with an acid-resisting varnish, and where the type is to be etched separately this is also covered for protection. Pinholes and imperfections in the resist are carefully spotted, and after the back of the plate is protected it is ready for etching.

FUTURA MEDIUM CONDENSED

It nas been announced by the Bauer Type Foundry, Inc., that Futura Medium Condensed type series has been cut and is ready for distribution.

FUTURA MEDIUM Condensed Series

E. Leipprand, Vice President of Bauer, states: "Futura Medium Condensed retains all the fine qualities that have made Futura famous all over the world." A brief showing displaying all sizes will be mailed upon request.

PLANT MOVED TO GARFIELD, N. J.

The Chambon Corporation has moved its manufacturing facilities to its new plant in Garfield, N. J. The new plant affords a floor space of 100,000 sq. ft. The manufacture of Chambon printing presses, among which is a new can-label machine, will be continued.

FACTS about the DIRECTOMAT MATRIX PRESS

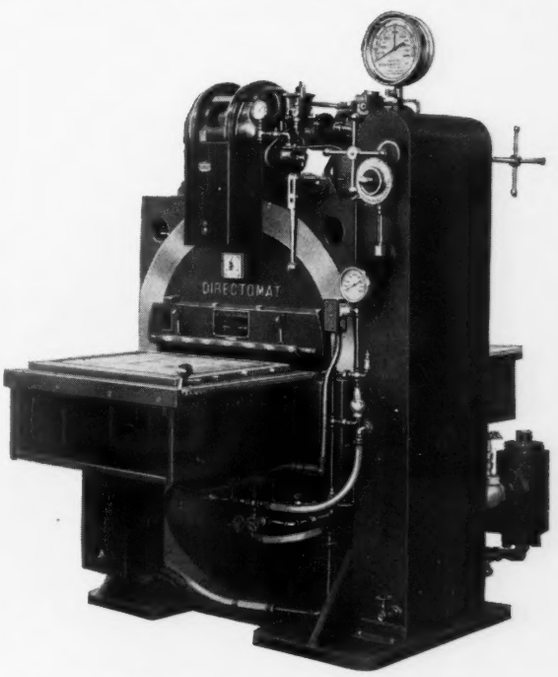
The DIRECTOMAT offers the widest **proof of actual performance** of any direct pressure matrix moulding equipment in the United States.

Over forty installations in commercial shops, newspaper plants and publishing plants are daily **proving** the DIRECTOMAT'S ability to mould better mats in less time than that required by other equipment.

Black and white newspapers, color supplements, color comics, magazines, books, shopping papers, sales books, wrappers, syndicate mats and ad mats are among the many jobs handled regularly on DIRECTOMAT Presses, with greatly improved results.

Over two years' operation in many of these plants **proves the dependability,** as well as the superiority of the DIRECTOMAT.

Repeat orders from leaders in many fields offer further **convincing proof** of the DIRECTOMAT'S unmatched supremacy.



The DIRECTOMAT is suitable for dry mats (cold moulding) and wet or plastic mats (hot moulding).

Follow the lead of the leaders! Write now for full particulars or a demonstration in any of twenty-seven cities.

Lake Erie Stereotype Equipment Corp.
Division of Lake Erie Engineering Corp.
Kenmore Sta. Buffalo, N. Y.

Technical Books

HANDBOOK *for* PRESSMEN

By FRED W. HOCH

New book by authority on all phases of letterpress production for the practical pressman. Contains 248 pages, 26 illustrations and 24 charts. $3.00 per copy, cash with order.

The PRACTICE *of* PRESSWORK

By CRAIG R. SPICHER

We offer copies to our readers at the special price of $4.00 per copy, cash with order. No printer should be without a copy. (9000 copies printed.)

MANUAL *of* STEREOTYPING

By JOSEPH GOGGIN

This 256-page book conveys latest technical information and manipulating procedure. Written by a practical stereotyper. Price $5.00 cash with order.

Send All Orders to

Printing EQUIPMENT *Engineer*

1276 W. Third Street Cleveland, Ohio

ENS

HEADQUARTERS FOR
STEREOTYPE SUPPLIES
TRY THE BEST
GUMMED PACKING FELT
ALL THICKNESSES
Cut in Strips Without Extra Charge
EASTERN NEWSPAPER SUPPLY
9607 34th Ave. Corona, L. I., N. Y.

SPACEBANDS—75c each
Sizes available: Regular, Teletype, Thin, Extra Thin and Jumbo
SEND FOR CATALOG
REID BROTHERS CO., Inc.
BEVERLY, MASSACHUSETTS

Provide your linotype machinist with a
CURLE MATRIX ANVIL
and he will reduce your machine expense.
WRITE FOR COMPLETE INFORMATION
The Monomelt Co., Minneapolis, Minn.

GENERAL REPAIR OF LINOTYPE AND INTERTYPE MOLDS (ANY KIND, ANY SIZE), PARTS, ETC., SINCE 1912
Makers of Reid Magazine Racks, Etc.
WILLIAM REID & CO., 2271 Clybourn Ave., Chicago, Ill.

Appliance Engineering

(*Continued from Page 20*)

under which he saw the sketch? Even though he works under daylight, is the flow constant?

The Macbeth Daylighting Company of New York, among other firms, have devoted considerable time and effort to this problem. The following quotes are from page 15 of the company's booklet, "Filters for Artificial Daylighting"*:

> A large publishing concern in Philadelphia, using approximately one hundred of the 500 watt industrial units, has had the experience over a number of years of the night shift doing better color printing than the day shift with windows available in the rear of the presses where the O.K. tables are located. Another constant source of difficulty in this plant, facing on four streets with north, south, east, and west exposures, was to interpret art departments orders. Eastern exposure in the morning may be sunlight-contaminated, while free from sunlight in the afternoon. The color presses on the south and west frequently have sunlight, while with the printing superintendent on the north, there was constant difficulty as to "a little deeper blue" or whatever the requirement might be. The superintendent and the pressmen depended on matched filter daylight, with the result that a "cooler color" ordered in the morning may be unduly cool in the afternoon in the Art Department, with the intimation that Art Department orders were not being properly filled.

A bit further on, the booklet relates an occurrence which often results in the loss of heads.

> A lithographer was refused acceptance on a million calendars with a trade-mark design because the color, which appeared similar to the approved copy sheet under artificial light, was quite different and unsatisfactory in daylight.

Yellows viewed under the most satisfactory conditions will prove difficult to run. Yet yellow seen under ordinary artificial light and then examined under daylight or daylight lighting units, often appears to be another color. Of course in any such discussion as this must be omitted reference to such individuals as the one mentioned on page 10 of the Macbeth booklet.

> A research worker in color photography was surprised when in the course of a complete eye examination he was shown to have excess sensation in blue and yellow with practically no sensation in green and red. He recalled many discussions on color with his assistants, but as he was the boss, he was always right.

*Editor's Note—By H. P. Gage and Norman Macbeth. Published in booklet form by the Illuminating Engineering Society. The text of the booklet was presented at the Thirtieth Annual Convention of the Illuminating Engineering Society at Buffalo, N. Y., August 31 to September 3, 1936.

Riegel's Certifine Tympan

A low-priced tympan with a hard, even surface and exceptional strength. Ideal for short-run job work. Nationally stocked in roll widths for every press.

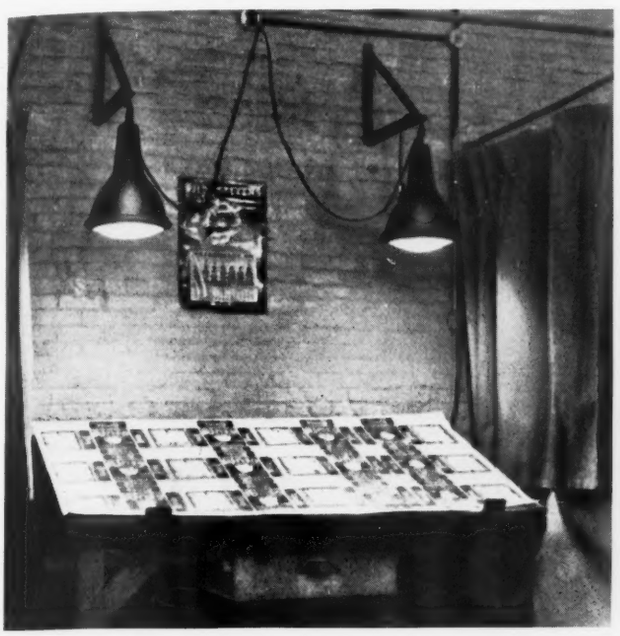
Clip This Ad for free trial sheets. State press and size wanted.

RIEGEL PAPER CORPORATION 342 MADISON AVENUE, NEW YORK, N. Y.

Yes, happenings like that crop up in printing too, occasionally.

Artificial Daylight Lighting

Different methods are used to achieve this goal of desired steady artificial daylight lighting. With one of the Artificial Daylight Units, light and colored objects are said to "appear as they do when viewed in nature—a goal which could be achieved by using an electric light source, with a suitable blue filter." These should prove helpful and represent one type of lighting



In a carton printing plant, these two 1 k.w. lamps have put the color matching facilities on a 24-hour color-certainty basis. Before these lamps were installed mechanical and production executives in this plant experienced the usual difficulties of color printers on dark days and impossible night work. These two lamps suspended over the inspection table serve $350,000 worth of presses in the production of a million dollars worth of printed matter each year.

equipment possible of acquirement. One of the big things in lighting is the development of the Lino-Light installed by the Harris Press across the feedtable, lighting up the gripper and guide mechanisms.

In the above cases appliances are available. Yet in rare instances are they used. Some few of the shops in New York include some of the suggestions in their equipment. But all too few ever think of the problem at all. How does letterpress fare in this direction?

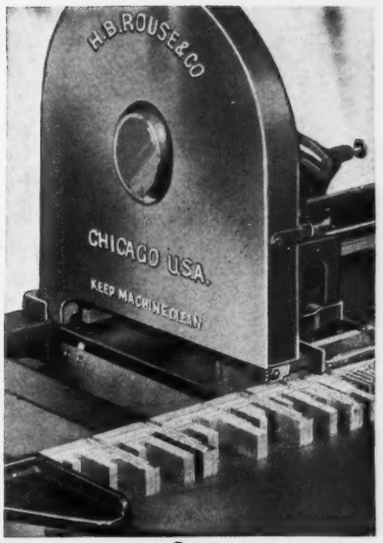
Undoubtedly there is a big field for accessory equipment manufacturers in all departments of the printing plant. More thought given to this matter would raise the printing standards to a still greater height.

"WHITE ELEPHANTS"

A rather attractive spiral bound book, 8½ in. by 11 in. size, is being sponsored by the Southern Master Printers Federation. Its title is "White Elephants". The text deals with private printing plants and it is asserted that printing is too highly specialized to be put on a "side-line" basis. Considerable data respecting private plant operating costs are contained in its pages.

Many secretaries of printing trades organizations present at the meeting of the Graphic Arts Trade Association Executives held in Cincinnati, September, 1936, ordered copies in varying quantities, believing that a copy of this book should be in the hands of every private printing plant operator and those contemplating the installation of private plants.

Copies of the book may be obtained at nominal cost from Southern Master Printers Federation, Inc., 1514-16 South St., Nashville, Tenn.



Save time

Rouse BAND SAW Cuts a full galley of slugs to variable measure in 35 Seconds

Reduce composition costs with the ROUSE BAND SAW.

No gauges to set. No vise to clamp for each handful of slugs. No machine delays. No danger. The ROUSE BANDSAW works as if by magic. Write now for full information.

H. B. ROUSE & CO.
2216 Ward Street, Chicago, Ill

You, Too, Will Like

MASTERPIECE
Cork Molding Creepers and STERE-O-CORK Molding Blankets

The majority of leading stereotypers have approved them as standard for stereotype use.

Order a supply today and make your own test.

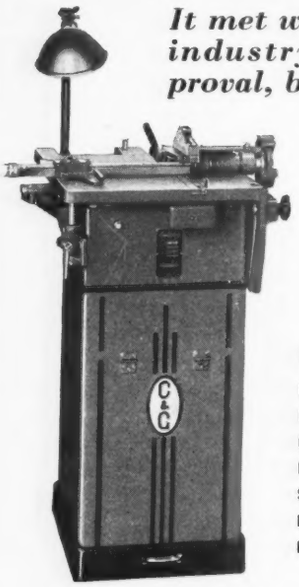
COYNE & PADDOCK INC.

{ Successors to Paddock Cork Company }

48-15 32nd Place Long Island City, N. Y.

C&G No. 3-A Deluxe Model Saw Trimmer

It met with the printing industry's hearty approval, because



It has *It*

Completely Equipped

$475.00

Other C & G Equipment:

No. 2 Saw Trimmer	$250.00
No. 3 Saw Trimmer	390.00
Router, Jigsaw, Typehigh	420.00
Router and Typehigh	290.00
Strip Material Cabinet	35.00
No. 20 Waste Receptacle	14.50
No. 21 Waste Receptacle	16.50

Write for Literature

Milwaukee Saw Trimmer Corp.

610-612 E. Clybourn St. Milwaukee, Wis.

It costs nothing to try

FLEX

DRY MATS

FLEX dry mats have helped many newspapers obtain better press-work without increasing costs, for they give remarkably faithful reproduction of halftones and better printing of heavy solids.

Send for free samples. Simply specify thickness, shrink, number of casts per mat, and type of casting equipment used. There is no obligation or cost.

FLEXIDEAL DRY MAT COMPANY
21 WEST STREET NEW YORK

Color Press

(*Continued from Page 18*)

chilling of plates due to the sudden application of cold water by injecting into this inflowing stream hot water from the mold, thereby raising its temperature above the point where damage to the plate will be caused.

The gauges are recessed to conform to the thickness of the mats most generally used so that in closing on the mats a metal-tight seal is obtained, thus preventing the forming of troublesome fins. Due to the compressibility of mats there is considerable leeway if a mat of greater thickness than contemplated is used. If, as in a few instances this leeway might be exceeded, the portion fitting under the gauges may be slightly scraped, or if undersized, that portion can be built up —in each case to conform with the recesses.

The head gauge of the Casting Mold is made to cast the clip bevel on the corresponding side of the plate. In addition, this bevel serves to locate the plate in the next operation.

Shaving the Plate—Cutting the Side Bevels

Shaving the plate and cutting the side bevels are performed simultaneously in the Combined Precision Curved Shaving and Cutting-Off Machine shown in Fig. 3. The plate, as it comes from the Casting Box, is placed in this precision machine arch up, so all chips will fall away from the plate. This action prevents injury to the printing surface of the plate. The cast bevel in the plate, noted above, seats against a stop in the rear of this machine to locate the position of the bevels and determine the width of the plate. The plate is locked securely in this position by the machine during the entire operation.

The curved shaving and cutting-off machine is electrically controlled and is automatic in action. The operator puts the plate in the machine and removes the plate after it has been shaved and trimmed to size and bevel.

The Apprentice Problem

By R. O. Vandercook*

If business is to continue to be better and better we must face some fundamental facts squarely. For the last seven years industry has not been training skilled craftsmen. Those who should have been apprentices were turned loose on the streets in the most formative period of their lives. Printing is one of the major industries and master printers are to feel the lack of skilled craftsmen. No printing office is better than the craftsmen on its payroll. We can build improved printing machinery much faster than intelligent craftsmen can be trained to operate it. The remedy is obvious. Every printer owes it to his industry to back up the schools of printing. The salaries of printing instructors should be increased so that men of the best mentality will be attracted to the work. The instructor in printing should not only know printing but should know boys and should have a natural sympathy with his pupils. Much good human material has been ruined because of the lack of mentality on the part of instructors.

*Vandercook & Sons, Chicago, Ill.

The shaving is done by two knives traveling in a perimetric path over the inside surface of the plates. The first takes off the heavy or rough cut, and the second a light finishing cut. Between the two shaving knives is interposed a series of hardened steel flat-faced rollers. The rollers exert a kneading action upon the plate and force it upwardly against the arch of the machine.

After having been shaved, the plates measure 0.250 in. thick. The bearing surface of the plate is flat without ribs to obtain maximum contact with the plate cylinder.

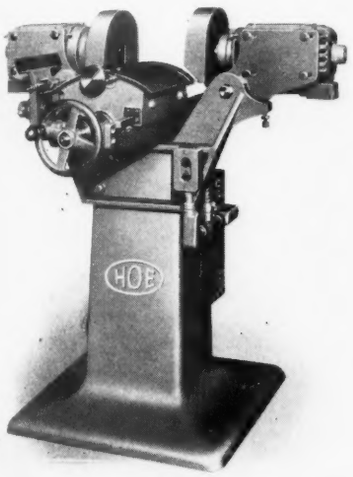


Fig. 5—Both head and tail bevels are cut simultaneously on the stereotype plate by this Hoe Double-Saw Beveler. A register mark which has been cast into the plate must correspond with a register mark on the slide in this machine when a plate is about to be trimmed so that all plates in a set of color stereotypes will be alike with respect to the relationship of the design on each plate with both bevelled plate edges.

During the shaving operation the clip bevel on the fag end is cut and on the cast-end the bevel is touched up.

It is claimed that in the many plates cast and trimmed in the *Plain Dealer* stereotype department not more than one-half thousandth deviation could be discovered in plate thickness.

Head and Tail Bevels

Both head and tail bevels are cut simultaneously on the Double-Saw Beveler. The plate is placed on the saddle. The marks *C* placed in the mat as shown in the diagram Fig. 1 and reproduced in the dead metal of the plate are brought into coincidence with corresponding scribe lines on the machine. The plate is securely saddled and locked and the plate is passed between the bevel saws.

It is claimed by the manufacturers that this method of platemaking insures all plates will be the same fit, length, width, and cut to the same bevel and that the design of all plates of a set will register, all within a very small tolerance. The bevelled edges will be in register with the design, and since the pressman must work from the edges, the plates can be located quickly on the press cylinder.

Quick Registering of Plates on Press

This system of Precision Plate-Making is continued in the positioning of the plates on the press which are mechanically registered on the cylinders. It is not necessary to remove plates once they are in place, nor to card nor shave the edges. Every clip and margin bar is adjustable and every plate can be moved on the press without respect to or disturbing any other plate. Each clip and bar and the corresponding portions of the body of the cylinders are scribed in such a way that when the corresponding marks are in coincidence the plates will be in register. Any divergence in these marks is a visual indication of the amount and the direction

These 7 VULCAN PRODUCTS WILL SAVE MONEY and IMPROVE PRESSWORK

VULCAN FELT BLANKETS
. . . require no breaking-in . . . are free from bolstering, ghosting, drying out and cracking.

VULCAN NON-FELT BLANKETS
. . . excellent for long runs . . . minimum wear on plates.

VULCAN E. D. BLANKETS
. . . provide better halftone results . . . used by many prominent newspapers.

VULCAN OIL-PROOF DRAW SHEETS
. . . do not carry surface indentations . . . cost less per thousand impressions.

VULCAN OIL-PROOF UNDERPACKING
. . . combine resilience and pliability with sufficient firmness and minimum stretch . . . will not crease, blister, or swell.

VULCAN VULCOLASTIC (NON-RUBBER) INKING ROLLERS
. . . unaffected by oils, driers, or temperature changes . . . free from swelling and shrinkage.

VULCAN BUCKLE-PROOF MOLDING BLANKETS
. . . mold type matter cleanly and with sharp edges . . . reproduce large type and solids with smooth, unbroken surfaces.

Write for booklet on "Vulcan Money-Saving Products"

VULCAN PROOFING COMPANY
58TH STREET AND FIRST AVENUE . . . . BROOKLYN, N. Y.
608 SOUTH DEARBORN STREET . . . . . CHICAGO
PACIFIC COAST: RALPH E. LEBER CO., INC. . . . SEATTLE
SOUTH: HI-SPEED ROLLER COMPANY . . . . NEW ORLEANS

practice Perfects

Doing one thing over and over and over alone leads to excellence. It took Kimble 30 years to bring its Graphic Arts electric motors to their present pitch of perfection. But look what you get!

KIMBLE ELECTRIC COMPANY
2011 West Hastings Street, Chicago, Illinois

KIMBLE Motors
Distributed by
AMERICAN TYPE FOUNDERS
Branches and Sales Agents in Twenty-Five Cities

THE SUCTION THAT LIFTS THE PAPER IN ALL SORTS OF FEEDERS

They are also used for blowing to loosen up sheets of paper on a pile feeder, and we have strainers to prevent oil from spraying on the sheets.

The printer also uses these pumps for cooling linotype molds and for blowing dust out of the working parts of machines and out of type cases.

The electrotyper uses the air for agitating his plating solutions, and these pumps are found in almost every plant doing this work. All sorts of shops use them for all sorts of air using devices.

IDEAL FOR VACUUM PRINTING FRAMES

In the big shops, especially in the newspaper plants, these pumps operate the stereotype furnaces creating high heats with gas or oil as fuel.

LEIMAN BROS., Inc.
141 CHRISTIE ST. NEWARK, N. J.
MAKERS OF GOOD MACHINERY 45 YEARS

THEY TAKE UP THEIR OWN WEAR

55 MODERN TIME SAVING MACHINES AND DEVICES FOR THE PRINTING TRADE
Saw-Trimmers, Flat and Curved Plate Routers. Mortisers, Planers. Saw Clamps, etc.
TOUGH TEMPERED STEEL RULE DIES
Write for Die-Cut Catalog
J. A. RICHARDS The Sawmaker KALAMAZOO

REBUILT LINOTYPES — INTERTYPES
All Models Available for Immediate Sale
Single Units and Complete Plants Bought and Sold
All New Parts Stocked Large Assortment of Mats
We sell New and Used Magazines, Reid Racks, Saws, Proof Presses, Gas and Electric Pots, Margach Feeders, Galleys, Cabinets — All Composing Room Equipment
LINOTYPE MAINTENANCE CO.
CAnal 6-0242 NEW YORK CITY 237 Lafayette Street

PYROMETERS Portable and Wall Type for stereotype or remelting pots, linotype, intertype and monotype metal temperatures.
Write for Information
ILLINOIS TESTING LABORATORIES, Inc.
139 W. Austin Ave. Chicago, Ill.

SPRING TONGUE GAUGE PINS

Reg. U. S. Pat. Office $1.80 Doz. 50c set of 3
Made Only by Originator. All Dealers.
We Make Gauge Pins, Gauges, Gripper Fingers, Etc.
The E. L. Megill Co., 763 Atlantic Ave., Brooklyn, N. Y.

GOODRICH PRINTERS' ROLLERS
for printing that is clear and sharp throughout the entire run.
NILES & NELSON, Inc.
Exclusive Distributors
75 West Street - NEW YORK • 400 W. Madison St. - CHICAGO

the individual plate must be moved. Each couple is arranged so it can be plated or operated independent of any other couple.

Reduction of Makeready

The printing cylinders of this press, it is said, are ground on their own journals to an accuracy of a fraction of a thousandth of an inch and are held firmly in correct printing contact by anti-friction bearings with eccentric impression adjustment. The plates are shaved to an accuracy of within less than 0.001 in. That portion of the makeready due to plate imperfection, sinks, and so on, are eliminated, it is said.

The cylinders are finely balanced and accurately mounted on staggered roller bearings so they can be easily turned by hand.

Proofing

As soon as any one cylinder has been wholly or partly dressed with plates, the plates on that cylinder may be proved, without reference to or interfering with operations on any other part of the press. Likewise, progressive proofs may be taken and the register and makeready proved immediately. This is accomplished by an impression throw-off, which permits the web to pass between the cylinders of any couple without printing and a device which allows of disengaging easily any cylinder and ink motion from the drive shaft.

Maintaining Register

If printing conditions are permitted to vary, misregister both longitudinally and transversely to the press will occur.

Varying speed, due to slowing-down for roll changes, is eliminated by the use of Full-Speed Pasters. Varying tension is overcome by the Electrically-Operated Tensions. The chattering of compensators between printings is prevented by the use of a newly-designed sliding compensator.

Side lay of the web is controlled by an electric adjustment and transverse movement of the cylinders is prevented by pre-loaded, deep-groove, anti-friction thrust bearings.

DESIGN PATENT ALLOWED

In addition to patent rights granted some time ago on Trafton Script, The Bauer Type Foundry, Inc., announces that Corvinus type face has been allowed Design Patent No. 192093, issued on November 24, 1936, by the United States Patent Office.

20,000 RE-EMPLOYED

"Business gains throughout the country have been so rapid that Railway Express Agency has had to re-employ 20,000 furloughed employes," declared L. O. Head, President of the Agency, on his arrival in Duluth, Minn., recently. The express executive, who is making a 10,000 mile business survey tour including the principal industrial and commercial centers of the country, expressed the greatest enthusiasm over improved business conditions, instancing gains in Railway Express volume of from 15% to 28% and in air express over 75% in many centers. These figures represent gains in business for 1936 over 1935.

NEWSPAPER PRESS SALES RISE

Expansion and modernization of newspaper press facilities have proceeded at an unprecedented rate during the past 60 days, according to sales records of R. Hoe & Co., Inc. Orders received during this period constitute an all-time record, J. M. Masterson, Vice President and General Sales Manager, has reported. In addition, the volume of auxiliary equipment, folders, reels, tensions and full-speed pasters, color attachments, and stereotyping equipment, was said to have kept pace with the press units. The offset presses sold in recent weeks have also reached record levels.

Technical Literature

for February, 1937

☐ *Folder No. 321*—Materials Handling Equipment issued by Lewis-Shepard Company, for handling barrels, drums, carboys, cartons, cases, etc. Copies of this new folder, illustrating Lift Trucks, Lift Truck Platforms, Floor Trucks, Stackers, Portable Elevators, Drum Drain Stands, Barrel Racks, and Carboy Pourers may be had gratis.

☐ *Newspaper Pressroom and Stereotype Supplies*—Contains prices and specifications of supplies handled by Corkpak.

☐ *Why G-E Motors Protect You Against Production Delays*—Bulletin describes construction and maintenance ease of motors which are literally taken apart by means of many illustrations to show reasons for reliability and how constructed.

☐ *Hairline Register*—Illustrated bulletin demonstrates flexibility of metal base for obtaining accurate register.

☐ *Photo Supplies, Bulletin No. 936E*—Bulletin illustrates and describes full line of supplies for the photographer and all finishing work.

☐ *Ludlow Karnak*—Booklet printed in black and colors shows range of sizes of Karnak matrix face with attractive specimen settings in which are used the various weights of Karnak face.

☐ *Tenaplate*—Folder describes and gives advantages claimed for Tenaplate molding material for electrotype plates.

☐ *Introducing Beautiful Penmanship to Typography*—Folder printed in color shows how Diane foundry type face may be used to best advantage.

☐ *Monarch Flux Powder and Flux Oxide*—Bulletin No. 61 discusses use of products for treating printing metals. P-Double-E File No. 1R.

☐ *Swift Transportation Service*—Pamphlet describes graphically the services offered by Railway Express Agency to get shipments of exhibits, rush advertising matter and similar shipments to their destination quickly.

☐ *C&G Products*—Illustrated folder describes complete line of composing room saw-trimmer models together with essential accessories designed for efficient operation according to needs of the user.

Printing EQUIPMENT *Engineer,*
1276 West Third St., Cleveland, Ohio.

Gentlemen: please send the literature checked above without obligation.

Name of Company.....

Attention of.....

Department Position.....

Firm St. Address.....

City.....State.....

TINGUE
PRESS BLANKETS
Keep Your Presses Productive! Save Make Ready Time!
TINGUE on Press Blankets guarantees Superior Printing Qualities
TINGUE PRINTING PRESS BLANKETS
are guaranteed to give superior printing
. . . at low production costs . . .
TINGUE, BROWN & CO.
118-120 East 25th St. NEW YORK, N. Y.
1227 Wabash Ave. CHICAGO, ILL.
723 East Washington Blvd. LOS ANGELES, CAL.

FOR DEPENDABLE MAKEREADY PROTECTION
Buy and Specify
CROMWELL
SPECIAL Tympan PREPARED Paper
QUALITY BUILT IN
The CROMWELL PAPER CO.
4801-29 SOUTH WHIPPLE STREET, CHICAGO

NEW—and BETTER Magazines for Linotypes
Top Plate of Duralumin, bottom one of brass and bars and braces of Duralumin. Combines durability of brass magazines with weight saving of Duralumin. Weight only thirty pounds. Price only $100 for full length, $80 for splits. Terms. Sold on approval basis.
MONTGOMERY & BACON, Towanda, Penna.

A Symbol TRIMOSAW of Quality
Hammond "Glider" TrimOsaw "Ben Franklin" TrimOsaw
Hammond "A-3" TrimOsaw Hammond Bench TrimOsaw
KALAMAZOO Hammond Machinery Builders MICHIGAN

Use FITZ-LIVECORK PRESS BLANKETS
Write for Samples and Prices
FITZPATRICK FELT MANUFACTURING CO.
1971 East 79th Street Cleveland, Ohio

WRITE FOR
FREE TRIAL OFFER
BETTER PRINTERS EVERYWHERE *find that the*
STATIC ELIMINATOR BRUSH
overcomes their static troubles and enables them to make more profits through greater production and lowering of cost.
WESTERN BRUSH CO., Inc. 175 W. LAKE ST. CHICAGO

Cost Control

(*Continued from Page 6*)

efficiency inches of that matter. The total efficiency inches of the different kinds of composition he had produced would be his efficiency rating for the day.

In some localities the Typographical Union contract contains a clause setting forth the standard of competency. This may be in lines per day or in ems per hour, but, you can easily reduce it to column inches of straight matter. That amount would, of course, be your standard of efficiency.

The contract I have in mind, when reduced to efficiency inches, says that an operator should produce not less than 30 column inches of 7 point type per hour. In an 8 hour day he should produce 240 column inches. In this example if he produced more than 240 inches his efficiency rating would be plus—if less it would be minus. Employees with continuous minus efficiency rating should be eliminated. Through this elimination an efficient force will be gathered gradually. Efficiency is the reward of constant vigilance and efficiency reduces dollar expenditures by removing useless expense.

The efficiency multipliers to be used will have to be calculated for each different newspaper according to its contract, if one is in effect, and the style and type sizes used, but will follow this list closely:

	Multiplier
7 point body type	1.00
6 point body type	1.15
Each initial letter	add 1 inch
6 point classified	1.50
Tabulated markets and sports	2.00
Heads, average run	.50

As an example let us say that an operator produced

125 inches of 7 point news matter;
50 inches of 6 point,
20 inches of classified,
20 inches of tabulated markets,
60 inches of heads, and had
10 initial letters in his day's production.

Then his efficiency rating would be as follows:

7 point	125×1.00=	125.00 efficiency inches
6 point	50×1.15=	57.50 efficiency inches
Classified	20×1.50=	30.00 efficiency inches
Tabulated	20×2.00=	40.00 efficiency inches
Heads	60× .50=	30.00 efficiency inches
Initials	10×1.00=	10.00 efficiency inches
Efficiency Rating		292.50 efficiency inches for day
Standard of efficiency		240.00 efficiency inches for day
Plus rating		52.50 efficiency inches for day

Many of us are prone to say we pay an employe for 8 hours work each day. We may say that we pay $8.00 for 8 hours work. We don't. We really pay $8 for what the employe produces in 8 hours. In this case we paid $8 for 285 actual inches or 292.50 efficiency inches of type. We could just as well have paid the $8 for far less production and still have paid for the 8 hours work.

What You Receive for Dollar is Important

Do you now see what I am driving at? It isn't the dollars that are important—it is what you receive for the dollar and the use to which you put this product. If you look after the production, the dollar will look after itself. If you overset and throw it away you have actually thrown away type and have really thrown away dollars, too.

(*To Be Concluded Next Month*)

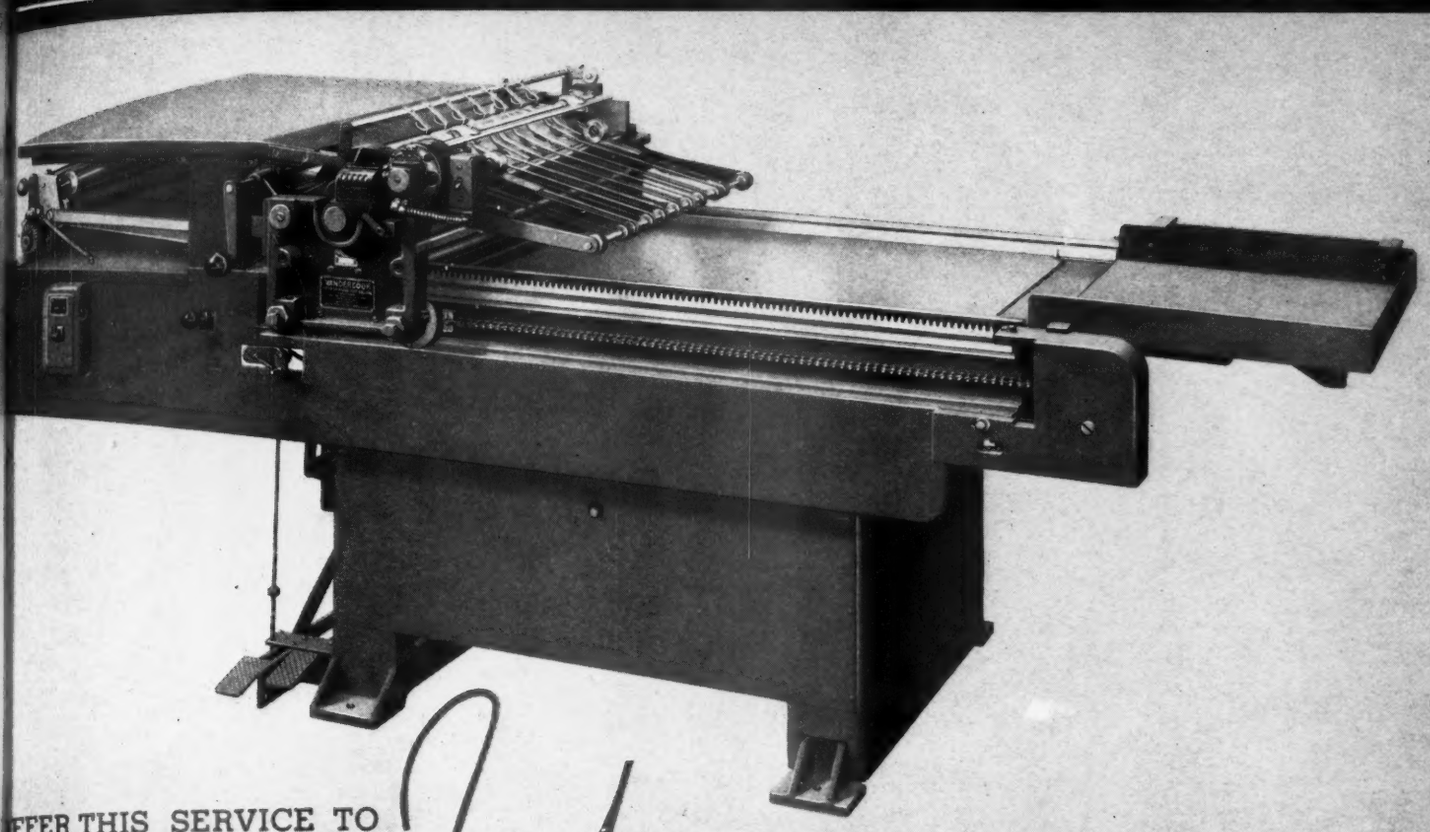
Consult This Index

Advertisers

For February, 1937

Page

American Publishers Supply ... 38
Atlantic Zinc Works ... 34
Booth, E. A., Rubber Company ... 35
Burgess Cellulose Company ... 37
Agency: Fred A. Robbins, Inc, Chicago, Ill.
Certified Dry Mat Corporation ... 7
Agency: The H. P. Boynton Advertising Agency, Cleveland, Ohio.
Cline Electric Manufacturing Company ... Inside Front Cover
Agency: Simmonds & Simmonds, Inc., Chicago, Ill.
Cottrell, C. B., & Sons Company ... Outside Back Cover
Agency: Fred Glen Small, Inc., New York, N. Y.
Coyne & Paddock, Inc. ... 41
Cromwell Paper Company ... 45
Agency: Russell C. Comer Advertising Co., Chicago, Ill.
Eastern Newspaper Supply ... 40
Edes Manufacturing Company, The ... 32
Agency: The Callaway Associates, Inc., Boston, Mass.
FitzPatrick Felt Manufacturing Company ... 45
Flexideal Dry Mat Company ... 42
Agency: Fred Glen Small, Inc., New York, N. Y.
General Electric Company ... 19
Goodyear Tire & Rubber Company, The ... 8
Agency: Arthur Kudner, Inc., New York, N. Y.
Goss Printing Press Company, The ... 6
Agency: Simmonds & Simmonds, Inc., Chicago, Ill.
Hammond Machinery Builders, Inc. ... 45
Hoe, R., & Company, Inc. ... 21
Agency: G. M. Basford Company, New York, N. Y.
Ideal Roller & Manufacturing Company ... 29
Agency: Munroe & Southworth, Inc., Chicago, Ill.
Illinois Testing Laboratories, Inc. ... 44
Imperial Type Metal Company ... 36
Intertype Corporation ... 6-ABCD
Agency: Fred Glen Small, Inc., New York, N. Y.
Kimble Electric Company ... 43
Agency: Kirkgasser-Drew Advertising Agency, Chicago, Ill.
Lake Erie Stereotype Equipment Company ... 39
Lanston Monotype Machine Company ... 25
Leiman Brothers, Inc. ... 44
Linotype Maintenance Company ... 44
Linotype Parts Corporation ... 31
Ludlow Typograph Company ... 5
Agency: Simmonds & Simmonds, Inc., Chicago, Ill.
Matrix Contrast Corporation ... 10
Agency: Fred Glen Small, Inc., New York, N. Y.
Megill, Edw. L., The, Company ... 44
Mergenthaler Linotype Company ... 17
Agency: Kenyon & Eckhardt, Inc., New York, N. Y.
Miehle Printing Press & Manufacturing Company ... 23
Agency: Raymond Heer, Chicago, Ill.
Milwaukee Saw Trimmer Corporation ... 42
Monomelt Company, The ... 40
Montgomery & Bacon ... 45
Morley Button Manufacturing Company ... 38
Agency: Chambers & Wiswell, Inc., Boston, Mass.
Morrill, George H., Company (Div. General Printing Ink Corporation) ... 33
Agency: Rose-Martin, Inc., New York, N. Y.
Niles & Nelson, Inc. (Goodrich, The B. F., Rubber Company) ... 44
Agency: Griswold-Eshleman Company, Cleveland, Ohio.
Reid Brothers Company, Inc. ... 40
Reid, William, & Company ... 40
Richards, J. A., Company ... 44
Riegel Paper Corporation ... 40
Agency: William H. Hodgins, New York, N. Y.
Rolled Plate Metal Company ... 34
Rouse, H. B., & Company ... 41
Agency: Clifton Kirkpatrick, Chicago, Ill.
Stahl Newspaper Supply Company, Inc. ... 3
Tingue, Brown & Company ... 45
Vandercook & Sons, Inc. ... Inside Back Cover
Agency: Clifton Kirkpatrick, Chicago, Ill.
Vulcan Proofing Company ... 43
Agency: Fred Glen Small, Inc., New York, N. Y.
Western Brush Company, Inc. ... 45
Wood Flong Corporation ... 30
Agency: Metropolitan Advertising Company, New York, N. Y.
Wood Newspaper Machinery Corporation ... 27
Agency: Fred Glen Small, Inc., New York, N. Y.



FFER THIS SERVICE TO *Your* ADVERTISERS

With the No. 325A Vandercook Power Page Proof Press you can give your advertisers 1000 good proofs in an hour - - - at very little cost. Co-operation in supplying proofs for department checking, or advance proofs for posting helps to make advertisements more effective - - - and your paper gets the credit.

Full pages or small single column advertisements on galleys may be printed with equal efficiency. Pages in stereotype chases may be proved without impression of the chase.

The 325A Vandercook Power Page Proof Press will pay its own way in added service, better proofs for reading - - - and in some instances direct revenue where an excessive number of proofs are ordered.

The No. 325A Vandercook Power Page Proof Press is easy to operate. Rigid-bed construction, heavy impression cylinder, and precision construction with ample inking system insures proofs of excellent quality whatever the demands of the form. Press bed is convenient for quick form or galley changes.

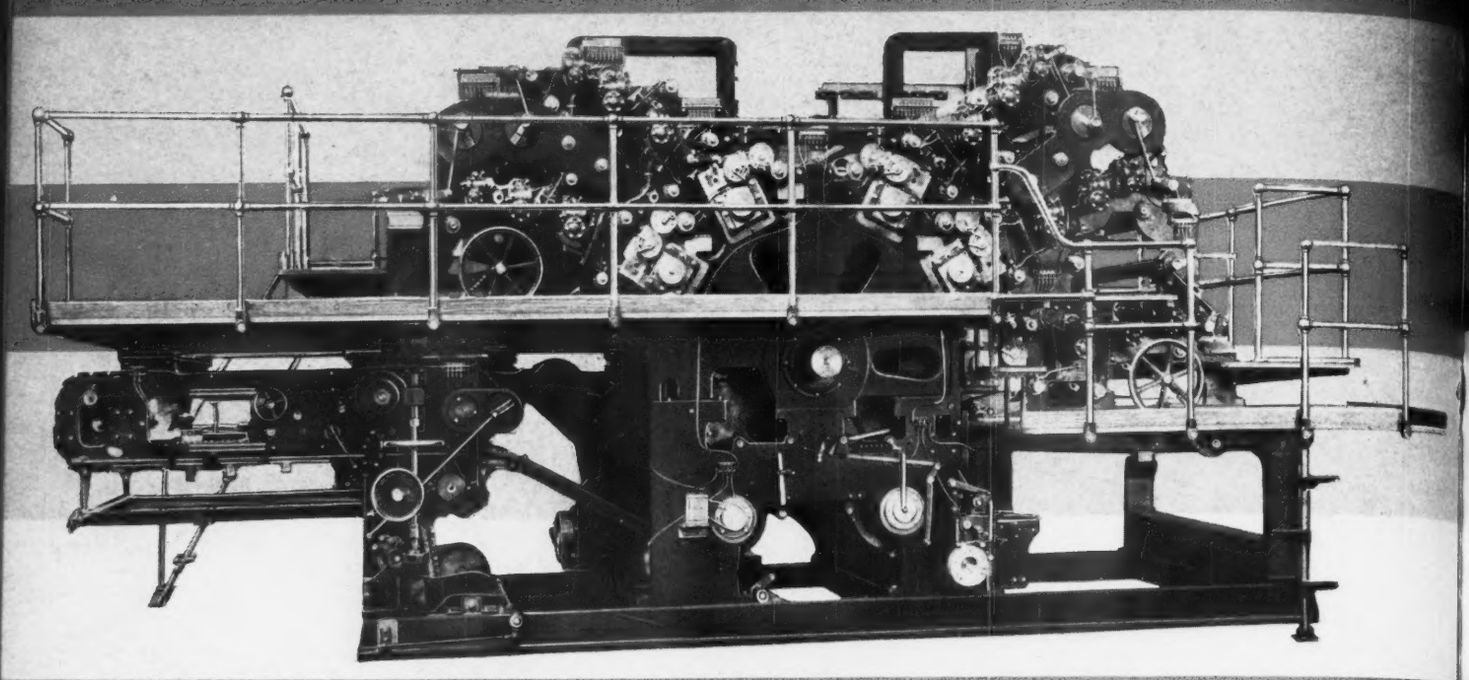
There are many other reasons why the No. 325A Vandercook has proved so productive to major newspapers everywhere. These reasons should interest you. Complete details of performance, and prices will be sent at your request, which implies no obligation on your part.

THERE ARE 25 SIZES AND MODELS OF VANDERCOOK PROOF PRESSES

VANDERCOOK & SONS

908 N. Kilpatrick Ave., Chicago, Ill. 220 E. 45th St., New York City

P R O F I T A B L E



50 x 72 Five-Color Press

The above picture shows a modern five-color Cottrell Press. This press is used for producing four-color process work—plus an additional flat tint—five colors altogether. It is a heavy press—rigid in construction throughout—with the Cottrell standard of distribution, close register at all speeds from starting to maximum, and the latest developments for volume production of fine color printing. Two well-known national publications are using this press—both installations made recently.

Cottrell also offers the latest improved roll-feed magazine presses, with folders or flat delivery, delivering either sheets or folded products at remarkably high speeds. All of these presses maintain a uniformly high quality of printing that fully meets the exacting demands of present-day national advertisers.

For economical, dependable, trouble-free production of magazine and multi-color printing in volume, investigate Cottrell Rotary Presses.

C. B. COTTRELL & SONS CO., WESTERLY, R. I.

NEW YORK: 25 EAST 26TH STREET • CHICAGO: 332 SOUTH MICHIGAN AVENUE
CLAYBOURN DIVISION: 3713 NORTH HUMBOLDT AVENUE, MILWAUKEE, WISCONSIN
SMYTH-HORNE, LTD., 1-3, BALDWINS PLACE, GRAY'S INN ROAD, LONDON, E. C. 1.

COTTRELL